

# *National* **SAFETY NEWS**

APRIL 1957

➡ WHAT'S GOING ON HERE?



IN THIS ISSUE

Weirton Stopped, Looked . . . and Thought  
German Material-Handling Methods  
Legal Aspects of Safety Regulations

# SEE US ABOUT NOISE

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**THE COVER:** Safety signs, roped-off area, hard hat, goggles, fire extinguisher—just to fix a faucet? Looks more like the set-up for a construction job at the plant. But it stopped every reader of *Clinton Cellophane News*, published at Du Pont's Clinton, Iowa, plant. Its purpose—to remind readers that more employees were injured off the job than at work. Mr. and Mrs. Don Everhart, daughter Debbie and son Mike posed for the picture.

\* \* \*

Statements and opinions advanced in signed articles are personal expressions of the authors, not necessarily those of the National Safety Council.

\* \* \*

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## National SAFETY NEWS

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APRIL 1957

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## Spring Fever

**S**PRING affects people in a variety of ways. Some of them drag bags of strange implements from the attic and take a few practice swings in the backyard. Others are thinking of excuses to get away from the job for the opening game of the baseball season.

These are perfectly normal impulses and we have the utmost sympathy for those who indulge in them. Those who are fortunate enough to be close to the soil are drawn to seed, fertilizer and the latest in garden gadgets. They watch eagerly for the first crocuses and tulips to poke their noses above ground and later for the first buds on the lilacs.

The miracle of spring has a benign influence on us humans. There is a quickening of thought and action and a desire to renovate our surroundings—sometimes our minds, too. We get the urge to aid Nature in brightening our surroundings and to put things generally shipshape.

In our own feeble way we try to follow with soap and water and paint Nature's splendid example throughout the great outdoors.

Many of us can remember old time plant men who thought a factory had to be dirty and would have snorted at the idea of painting machines and walls in boudoir colors. And it took some safety men a long time to realize that there was a connection between cleanliness and safety. Beyond keeping tripping hazards out of the aisles, and disposal of waste that got in the way, the old timer regarded housekeeping as a mere refinement.

That attitude was typical of the times when chewing tobacco was a staple article of diet. Experience has shown that cleaning up—and keeping the place that way—is good business. Removing dirt and applying paint not only beautify the surroundings but also protect the investment in home and factory.

The cost of spring housecleaning is more than repaid by its benefits. Disorder is a notorious thief of time and dingy surroundings are depressing. Orderly storage of materials, clean windows and freshly painted walls are stimulating.

Unfortunately, it isn't easy to keep up the spring clean-up spirit. When summer heat bakes the vegetation and in the dark days of fall and winter, interest in one's surroundings often goes into hibernation.

But where management wants it, year 'round good housekeeping is a practical ideal. You'll find plants that are as neat in December as they were in May.

That isn't done just by desk thumping and sending out memos. You'll find that management has backed the program with an adequate cleaning force and efficient equipment. You'll find too, that employees in such a plant take a pride in the looks of the place.

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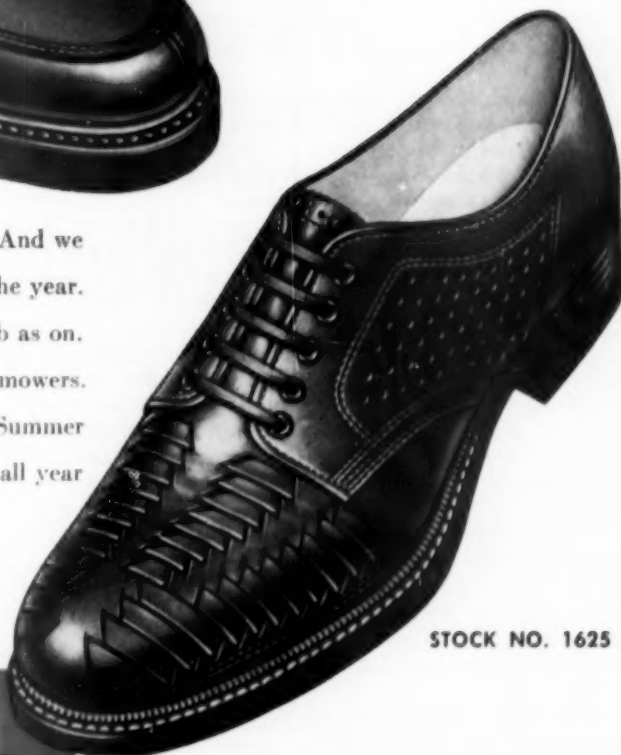


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# THE SAFETY VALVE



*Nothing human is alien to me*

—TERENCE

## Relax—If You Can

PICK UP almost any magazine and you'll find an article on the tensions of modern living, with suggestions on how to avoid ulcers and breakdowns. Executives in particular seem to be the object of much solicitude.

Editors are not unfamiliar with tension but they are executives only in a very free and elastic use of the term. But this page isn't a psychiatrist's couch.

Writing does provide a sort of mental catharsis. William Feather once said he got paid for putting on paper what less favored folks paid a psychiatrist to listen to.

But nobody escapes tensions. The farmer is supposed to live a tranquil life close to nature. But in spite of his tractors and milking machines he has economic, social and political problems that his grandfather never faced.

The doctor who tells his patients to slow down, or else, usually needs the advice more than most of the customers in his crowded waiting room. And how many of those people need a good listener more than something in the pharmacopoeia?

Teachers have to maintain discipline with more kinds of mixed-up kids than they had in my youth. And in those days teachers were permitted—even encouraged—to use methods that provided an emotional release while maintaining order.

The checkers in the supermarkets don't work as long hours as we did in the village store. Modern packaging has eliminated digging sugar and oatmeal out of a barrel but retailing has speeded up and become monotonous and impersonal. We had peak periods but a lot of the day was spent in visiting.

Another object of our solicitude is the man on the factory assembly line. His workplace is cleaner, better lighted and better ventilated than it used to be. He has hoisting equipment to handle the heavy loads and he works shorter hours. But modern living has transferred the load from his muscles to his mind.

And today's worker—which includes everybody who is gainfully employed—has to get to and from work. It doesn't matter whether you squeeze into a crowded bus or risk your simonized fenders in traffic—you're under strain. Unless, of course, you're one of the favored few who can walk to work.

Not all of the tensions come from the job. One of the quickest and surest ways of going nuts would be to sit by the radio and listen to commentators

pontificating on world problems and viewing the scene with alarm. Fortunately, most people turn it off before they reach the danger point.

One of the best discussions of this subject, which has become a universal obsession, was in a recent issue of the *Monthly Letter* of the Royal Bank of Canada. Month after month, the anonymous author of this four-page leaflet keeps turning out gems of wisdom and common sense.

The *Letter* offers no sure and easy remedies. It quotes some medical opinion, which is a bit deep for some of us. It also emphasizes things we all know but consistently ignore.

Small relaxations help. When listening to a bore, slacken your muscles; on a bus or train, close your eyes; when waiting for a caller to be ushered in, look out the window.

Through sleep, we may even escape for a while from our own company, and that escape isn't a bad thing. The late Dr. Harold Hulbert, Chicago psychiatrist, once said music helped him to get away from two guys he didn't like; one was Hulbert and the other was the current tenant of the White House.

The stresses associated with management of a business, a class room or a home can have a definite effect upon health, says the *Letter*. Leadership has its price but the toll can be cut.

A good executive must first be a good animal. That means watching the waist line and observing certain other elementary rules of keeping fit.

Many tensions arise from trying to act the role of superman, the *Letter* continues. Pressure can be eased by admitting the impossibility of always being right and never suffering a setback.

Of course, you can counter that statement by pointing out all the people who miss the boat by lack of confidence, timidity, or just plain laziness.

Getting away from professional jargon, we wear out before our time because we aren't equal to our jobs—either because of inadequate mental equipment, or more often, because we don't use what we have. There is friction and lost motion—both in the individual and in the organization.

Here is a quote from the *Letter* worth remembering: Wise use of leisure holds the germ of survival in our complicated civilization. Play, fun and laughter are agents of health.

\* \* \*

"I'M GLAD CHRISTMAS is over; there were so many crash-ups," said my granddaughter Katie, not quite six.

That was one reaction to all the radio and TV talk about traffic accidents over the holiday. And in Katie's case it was probably accentuated by the loss of her jaywalking Siamese cat and a minor collision involving the family car.

Some people who criticize the publicity about holiday accidents might use this as an argument that we're trying to kill Santa Claus.

*Carman Fish*



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# WIRE FROM WASHINGTON



By Harry N. Rosenfield

Washington Counsel, National Safety Council

WASHINGTON has been literally buzzing with safety matters of one kind or another; safety is becoming an increasingly popular subject for legislative as well as executive consideration.

**President's Messages.** Among the requests for Congressional legislation proposed in the President's budget message were four dealing with safety:

1. To provide better safety measures in Federal agencies.
2. To authorize a governmental supplement to commercial insurance against liability from nuclear accidents.
3. To enact a program of grants-in-aid to the states for promoting occupational safety.
4. To provide that each federal agency bear the cost of compensation paid to its injured employees.

The second and third of these proposals also appeared in the President's economic message.

In the departmental proposals of the budget message, much of safety interest appears. The President proposed \$2,200,000 for the grants-in-aid to states for occupational safety. In addition, the Department of Labor's budget estimate includes funds for assistance to state and federal agencies in reducing industrial accidents through advice on inspection techniques and in planning training courses.

The Interstate Commerce Commission's estimate includes an increase for safety appliance inspections for rail carriers and for the number of locomotive inspections.

The Atomic Energy Commission budget gives "special emphasis" to the "comprehensive study of permissible levels of exposure to radioactive contamination from all causes."

The Treasury budget includes funds for the strengthening of the enforcement of motorboat regulations and other safety laws.

For the CAA, the budget plans almost 500 new jobs in the safety division, and a 40 per cent increase in the funds for operating the Federal airways system and maintaining safety standards in aircraft design and operation.

For CAB, an increase of almost 50 per cent over 1956 was requested for safety regulation.

The President's budget also includes a request for substantial increases in funds for the Public Health Service for research in combatting air and water pollution. The President also asked for more than one-third of a million dollars for an accident prevention program within the Public Health Service, contemplating research to determine the extent and cause of accidents, and the development of sound techniques for their prevention and control. The program will provide technical assistance and training and demonstrations of proved safety techniques.

**Highways.** Highway accidents continue to be an item of major congressional consideration. Many proposed studies. Congressman Roberts, who was chairman of last year's study by a House subcommittee, reintroduced his study proposal in this session of the Congress, H. Res. 101, and promised to give special attention to the importance of speed in accidents. He also warned that legislation limiting horsepower "is not at all unlikely" if the accident rate continues to soar. As the only alternative, he urged "a campaign which succeeds in educating the public to better traffic practices."

Other proposals for study in-

cluded the establishment of a federal Commission to investigate highway traffic safety conditions on interstate highways, SJR 10 (Saltonstall); a study by the Senate Committee on Labor and Public Welfare to determine what action can be taken by the federal government, S. Res. 12 (Mrs. Smith), and a Senate study of whether automobile design meets the safety requirements of the government's new highway construction law (Neuberger).

A wide variety of specific proposals to deal with the accident problem has been introduced. Senate Majority Leader Johnson introduced S. 1292 which would establish an Automobile and Highway Safety Division within the Department of Health, Education and Welfare, which would work in cooperation with public and private agencies to cope with what he called "a continuing national catastrophe."

The proposed division would collect information, "work with" state and local governments, cooperate with organizations like the National Safety Council, promote research into improved auto safety design, and keep the public informed of facts and proven safety measures.

Congressman Roberts proposed in H.R. 5416 the promotion of safety by assisting states to establish programs of driver education.

Congressman Beamer proposed in HJRes 221 to grant congressional consent to interstate compacts to promote highway safety; he conceived of the compacts as creating a body with legal authority to prepare and promulgate regulations and legislation to meet the problem.

H.R. 2487 (Rees) would bar  
—To page 110

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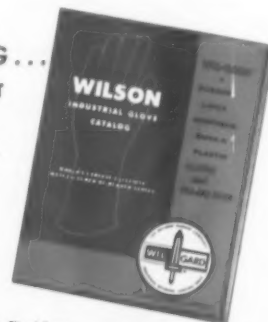
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## "Seven Gems"

*How to Tell What You Know: A Handbook for Management Men.* By Arthur Secord. Publishers, American Press, 489 Fifth Ave., New York 17. 1956, 72 pages. \$2.50.

SAFETY PEOPLE have heard Arthur Secord speak at the 1952 and 1955 National Safety Congresses in the early morning sessions. To thousands of people his talks have been an inspiration.

This book does not really tell "how to tell what you know," because that is a big subject and this is a small book. Rather it might be called "Seven Gems from Secord's Writings" because each of the seven brief chapters is a gem, possibly more priceless because it is small and beautifully polished. Some Secord gems which many will remember are:

- Speak the other fellow's language.
- Never more than one point.
- In teaching, use an example.
- Never praise before finding fault.

This is a handy volume that can be read in an hour but will not be exhausted in a year.

As Secord says, "A man would be conceited indeed who claimed to have the answer to the problem of the communication of ideas. Each of us hopes to do a little better job tomorrow than he did today."

—GLENN GRIFFIN

## Standards—the Base of All Mass Production

*National Standards in a Modern Economy.* Dickson Reck, editor. Published by Harper & Bros., 51 E. 33rd St., New York 16. 361 pages, 1956. \$5.

FORMER PRESIDENT HOOVER reports in Chapter One of this important book that progress in standards "... did not come from scientific discoveries of material laws, new materials, inventions and increasing skills. But you and I know that the increase in our living standards and comfort has received an enormous contribution from these related ideas of standards, of simplifications and specifications ... They are the base of all mass production ..."

*National Standards in a Modern*

*Industry* is a compilation of treatises of 34 outstanding specialists in their field. The book is presented in three parts: Part I—"The Movement Toward National and International Standards." Part II—"Liberating Initiative and Productive Forces by Applying Standards." Part III—"Some Implications of the Use of National and International Standards."

"This book should be at the top of every executive's reading list," says J. L. Cranwell, vice-president of the Pennsylvania Railroad Company. "Standardization is fast becoming recognized as a management function and a planning and operating tool ... this volume has opened a new horizon in management techniques through the eyes of the most noted authorities on standards."

This story of our national standards is of specific importance to safety engineers and to all levels of management in their companies. The American Standards Association evolved through necessity from the American Engineering Standards Committee, which itself was formed to coordinate the development of engineering standards of separate engineering societies which could not avoid overlapping.

Included in the original five founding organizations of AESC were The American Institute of Electrical Engineers, the American Society of Civil Engineers, the American Society of Mechanical Engineers, the American Institute of Mining and Metallurgical Engineers, and the American Society for Testing Materials.

It is significant that one of the first projects of the AESC was the drafting of national industrial safety codes. Since the beginning of AESC, more than 1,500 national standards have been developed, of which nearly 200 are safety standards.

In 1928 the AESC was reorganized and a new constitution and a new name—The American Standards Association were adopted. The ASA does not initiate nor write standards. It provides a procedure or machinery for the development and voluntary adoption of national





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standards by representatives of all groups having a legitimate interest in the project.

One of the most important fundamental guides for the development of standards is the consensus principle, which is defined as follows:

"The national standard implies a consensus of those substantially concerned with its scope and provisions . . . the basic test to be applied in all cases is the fact of the assent, affirmatively expressed, of the groups having substantial concern with the standard. Such groups have an inherent right to representation on the body dealing with the subject-matter of the standard, but it is not essential that this right be exercised."

The value of safety standards to industry is told by Arthur S. Johnson, vice-president, American Mutual Liability Insurance Company. In Chapter 16, "Safety Standards—A Demonstration of Industrial Self-Government," Mr. Johnson wrote, "Voluntary adoption and use of safety standards, developed with full and free participation of all the affected interests, is the highway to self-discipline, freedom from accidents, and true freedom of enterprise. Safety standards are the best acceptable opinion of the groups that drafted them. The consensus principle means that all those who are legitimately concerned with the project have a right not only to be heard but also to be recognized as having competence to contribute their experience and their opinions, which opinions cannot be overruled merely by a majority vote."

This book has considerable value to industrial people and to any thoughtful person interested in the progress of our social structure.

#### BOOKS AND PAMPHLETS

##### Chemicals

*Antimony Trichloride*. Manufacturing Chemists' Association, 1625 Eye St., N. W., Washington 6, D. C. 1957. 12 p. Chemical Safety Data Sheet SD-66. 30c.

##### Fire Protection

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##### Ladders

*American Student Safety Code for Fixed Ladders*. American Standard Association, 70 East 45th St., New York 17. 1956. 18p. ASA-A14.3. 1956. \$1.00.

## Best Things in Life are Free

Did you ever watch such active kids? Just itching to get out in the yard and play catch or romp with the old man. But, Pop got his toes accordion pleated and ain't gonna romp no more.

Did you ever see such a pretty little blue eyed blond? Ought to give her something just for being so pretty to look at. But, her Daddy knows from nothing. Got something splashed in his eyes and doesn't see so good anymore.

Did you ever meet a sharper, clean cut young lad? Would probably be a whiz in college—if he didn't have to support the family since his Dad got crippled up at the plant.

Did you ever see a finer combination of feminine charms to latch onto and snuggle in your arms? But George got his arms mangled—and it isn't the same when you're just using stubs.

Did you ever smell such fragrant blossoms? Makes you think of dewy moonlight nights, soft music, and all that goes with it. But, Sam didn't read the instructions and got a whiff of a chemical that put him out of business.

Did you ever witness a frostier crisp clear day? Perfect to go out in the woods to see what you can take a pot-shot at. But, Al doesn't go hunting since he crumpled his thigh falling off the ladder.

Did you ever go to bed with a more satisfied feeling? The kids well and healthy, the bills under control, a loving wife, and a good job. But, Ed wiped out all this when he wrapped his car and family around a culvert.

The best of life's pleasures are free. All you have to do is preserve your facilities for enjoying them.

—ROBERT D. GIDEL

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*Development of a Transistor-Type Telephone System for Mine Reserve Operations*. U. S. Bureau of Mines. Publications Distribution Section, 4800 Forbes St., Pittsburgh 13, Pa. 1957. 11p. Report of Investigation 5318. Free.

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#### Hospitals

"Charge Open Doors Added to Fire Loss." *Modern Hospital*. Feb. 1957. p. 83-84.

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(Fiction)

## THE DIARY OF A SAFETY ENGINEER

"We never have any serious accidents . . ."

You've heard that one often and usually it's sincere. But the records may tell a different story

# Nothing Serious

By BILL ANDREWS

April 4, 1957

JOHN MCCARTHY said, "I know you want to make a showing here in our plant. I know it's supposed to be the model in safety for the whole Lovellburg project. I want to cooperate.

"But look, man, what is there to do? This is a new plant, well designed, well lighted. We haven't had a serious accident since we opened four years ago. Our machinery is guarded. Our assembly operations are light. I honestly don't see what can be done to improve things, and I don't like to see my plant made into a guinea pig just to sell an idea to others. It isn't sound economy. Your work is out in the high-hazard construction work, not here where we put out electronic equipment."

I looked at my notes, debating in my mind, which of several facts to counter with. Finally I said, "Actually, you have a high accident rate, John. You have just about the same frequency rate as the average of all manufacturing units reporting to the National Safety Council—and that high rate came, as you have said, under conditions of modern plant, light operations, and so on, while the NSC average includes steel mills, auto factories, foundries, and other heavy manufacturing operations."

"Frequency—well maybe," he

said. "But all we have is trivial things, first aid cases mostly, a day or two lost time, nothing serious."

I shook my head. "The first aid cases aren't in this data. These are all lost-time accidents. But even on severity your showing isn't good. You're having far too many serious cases."

"Now that's just the bunk," McCarthy blurted out. "There hasn't been a fatal accident or an amputation or any other serious accident in the history of the plant."

I replied, "Granted no fatalities or amputations—but I can count six serious injury cases on your records."

"Six," he shouted. "You can't name a single one!"

"I'll name them," I said. "Joe Blacksity, in 1954. Mary Morgan and Lester Fidel in '55."

"Now just a minute," McCarthy broke in. "You can't call those serious. Blacksity fell off a ladder and broke a leg. All right, that was some lost time, but you can't call it serious."

"Your compensation carrier thought it was serious. Three months of compensation payments. The fracture was compound, and Joe was old, and it didn't heal quickly."

McCarthy snorted. "I still don't call a careless fall off a ladder a

major accident. Mary Morgan just cut her finger, and Lester—I think that was a bump from a hand truck."

I checked my notes and filled in the details. "Mary cut her finger, didn't get first aid, and came down with a first-rate infection that needed surgery. Three weeks compensation and a pretty sizable medical bill. Fidel got his foot caught between two hand trucks and had a badly bruised ankle—two weeks."

"Then in 1956 you had Lloyd Smith with a bad back from improper lifting—and Sylvia Bright fell on the steps one icy morning and cracked two ribs. Then last week you had your machine shop foreman, Dennison, catch a bit of steel in his eye."

McCarthy said, "Now you're just fly-specking. That was nothing. Just a few days off."

I shook my head. "Once again, your comp carrier isn't going to call it nothing. I've just been talking to Dennison and he's slated to go into a Chicago hospital tomorrow for surgery. They may be able to save the sight of that eye—and they may not."

McCarthy looked very unhappy. "I still say these aren't what we call serious accidents. They're all little things turned bad by flukes. And anyway, they aren't the kind

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National Safety News, April, 1957

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**SAFETY WEEK** was announced on the cover of the annual safety issue of Weirton Steel Employees Bulletin. Employees Ted Derosky and William Todd are examining a copy in Mom's Restaurant, one of many distributing points for the magazine.

## Weirton Stopped, Looked ...and Thought

**Everybody had a part in the town's first safety week and motorists passing through were impressed**

"**S**AFETY WEEK sure got off to a bad start," remarked one citizen of Weirton, W. Va., on the opening day of the campaign. "I saw a bad accident this morning. Looked like someone could have been hurt."

The "accident" he had seen was

one of the wrecked car displays so frequently used in safety demonstrations.

"Well," he observed, "it sure looked real—made me slow down and think."

The committee had no intention of fooling anybody with these

wrecks. But if they made people slow down and think, they served a useful purpose.

Weirton, a city of more than 30,000, is located in the West Virginia Panhandle almost directly across the Ohio River from Steubenville. Highway 22 carries a



**A WRECKED CAR** planted on this highway entering the city made one motorist think Safety Week was off to a bad start. He admitted it made him "stop and think."

heavy volume of traffic through the city, and, like many another city, Weirton's big problem is the out-of-town motorist.

Safety week was inspired by accident—or at least by chance—over a discussion of wrecked automobiles.

Over the Fourth of July week end, the local Junior Chamber of Commerce, the American Legion and the Veterans of Foreign Wars had conducted a traffic safety campaign, and to add realism to their message they placed

wrecked cars along routes entering the city.

Two weeks later, when the scheduled speaker for the Kiwanis Club meeting was unable to be present, the club president called on members to fill the gap with brief reports on topics of current interest.

One report mentioned local comment on the exhibit of wrecked autos, and that led to a discussion of possibilities for an expanded program that would include home and job safety as well as traffic.

After reading the account of the Kiwanis meeting in the newspaper the following afternoon, E. B. Bennett, general superintendent of Weirton Steel Company, wrote to Dr. J. R. Graf, president of Kiwanis, offering the company's cooperation in a community-wide program. As chairman of the company's general safety committee, he knew the benefits that such a program could bring to business and industry and the public.

**DO NOT JAYWALK!** was stenciled on curbs in Weirton's business section.



**SAFETY** "checks" went to Weirton Steel employees with their regular checks during Safety Week. Each payroll insert carried four important reminders.



**MAYOR** Sam Kusic looks on as Mrs. Earl Zagan (left), and Mrs. Henrietta Bosworth put first Safety Week bumper sticker on his car.



**SPECIAL** literature on safe driving was distributed at entrances to the city by members of the American Legion and Veterans of Foreign Wars.

The Kiwanis Club took up the project. Representatives of fraternal, civic and social organizations in the city were invited to attend the organization meeting. Plans for safety week got under way, with Mr. Bennett as general chairman. October 1-7 was selected for the date.

This was early in August and a series of planning meetings followed. Attendance grew until more than 60 organizations, businesses and industries were represented. President C. B. Dodd and Managing Director Charles Hopkins of the West Virginia Safety Council met with the committee to give Weirton people the benefit of the Council's experience. From this meeting came workable ideas that helped to make Safety Week a success. The Council

scheduled three of its members as speakers for public meetings.

With two months of hard work behind it, the committee was ready to put the program into action. On Sunday, September 30—the day before Safety Week began officially—the churches set

the pattern as ministers keyed their sermons to the theme, "Be Thy Brother's Keeper."

Monday morning members of the committee met for a kickoff breakfast and heard an inspiring talk by E. L. Langhorn, vice-pres-

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**INDUSTRIAL** safety equipment was featured in this store window—one of many displays carried out through co-operation of local merchants. Weirton Steel's safety director, Milo Gray, and his staff took an active part in the week-long program.







**THE ANDES** provide an awe-inspiring background for the Braden Copper Company's mine at Sewell, Chile. This view of the mine buildings is from the water tanks above the city.

# Chile Moves Ahead

**Government and industry are making the country  
a proving ground for safety and health programs**

**T**HE formation in 1952 of the "Servicio Nacional de Salud," or National Health Service, has given a tremendous impetus to vastly improved domestic health and safety in Chile.

The new agency consolidated into one department several federal bureaus that operated independently of each other, although all performed services in the areas of public health, industrial safety, compulsory workers insurance, illness and old age pensions, working conditions, and other phases of social and industrial health and welfare.

Prior to 1952, industrial hygiene and industrial safety were left mainly in the hands of individual companies. Liaison between clinical experts and safety engineers was nonexistent. In addition, there was no full-time government staff of any consequence, nor a staff with technical training to analyze problems and evaluate methods for avoiding accidents and illnesses.

In 1951, the Rockefeller Foundation, the Institute of Inter-American Affairs, and other international organizations, made recommendations to the govern-

ment of Chile, and an industrial hygiene program was initiated.

With the establishment of the National Health Service, many health and safety benefits were expanded. The program was motivated by the need for more and better qualified technicians and by a desire to elevate the living and working standards of the people of Chile. Using scholarships made available through such international organizations, engineers and doctors came to the United States for special studies.

The contribution of the Institute of Inter-American Affairs



(Technical Assistance Program) proved exceptionally beneficial with experts on the working front in Chile. These representatives continue to serve the regional Health Centers, apart from grants of equipment, transportation units, laboratory materials, etc.

Currently, industrial safety efforts are carried out as an integral part of the National Health Service as a subdepartment dealing with hygiene, safety, and industrial medicine. Fourteen engineers, 7 doctors, 16 technical specialists, and a full-time clerical staff comprise the NHS force. The World Health Organization recently indicated the possibility of establishing in Santiago a pilot physical rehabilitation center to deal with occupational diseases and accidents.

Statistically, Chile can be considered the proving ground for industrial hygiene and safety applications. The accident rate is 45.9 per million man-hours, not including traffic and other non-vocational accidents—some 5 or 6 times greater than the industrial accident rate in the United States. The severity rate is 3.94 per million man-hours, also about 5 times the rate in the U. S.

These high figures are attributed to the neglect over many years of increased industrial ac-



**WINNER** for the ninth consecutive year of the Inter-American Safety Award is the Braden Copper Company, Chilean Division of Kennecott Copper Corporation. General Manager R. M. Haldeman accepts the award from Gen. Carlos Ibanez del Camp, president of Chile. Present for ceremony were Gen. Jorge Ardiles, commander of Chile's Cabineros and president of Chile's National Safety Council, and Col. Benjamin Videla, minister of interior.

tivities, the lack of adequate personnel preparation for the work to be done, and the lack of stimulation for improvement because blanket coverage compulsory insurance compensates accident and disease victims. Another contributing factor is the worker's own indifference toward the advantages of accident and disease safeguards. Therefore, in addition to caring for the medical and safety

needs of the people, the government workers have an educational job to do as well.

Representatives of the federal health organization and representatives from other industries make periodic visits to the country's outstanding industrial installations to study in-plant safety methods and facilities. The Braden Copper Company's industrial

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**PNEUMATIC** drilling in El Teniente Mine.



**A WARD** in the hospital at Sewell.



**ELECTRIC TRUCK** is equipped with side guards for the operator and with a hydraulic drum loading apparatus.

**A WORKER** illustrates one wrong and two right ways to move a crate. A solid round iron (a) used as a transporting roll is a hazard to the hands. Steel pipes (b) or solid rolls with center pins (c) are safe.



## SOME GERMAN METHODS

**ONE** of the astounding developments of the postwar years has been the rebirth of industry in Western Germany. Out of bombed and shelled rubble has grown a modern industrial plant

**THIS HANDY** floor trolley is used for pulling metal sheets from storage rack. It's portable and simple to make.





**HAND TRUCK** for moving trash cans up and down stairs has balloon tires and sleigh frame.



**LEVER ARM** effect of the "stapler's axe" enables one man to lift a whole pile of material to replace a wooden spacer between layers.

## of handling materials

that has impressed visitors from all countries.

Judging from the number of German safety men visiting National Safety Council headquarters and the amount of printed material the Council receives from German safety organizations, ac-

cident prevention work is keeping pace with general industrial growth.

The photographs on these pages show some of the devices that have been developed to help German workers handle material efficiently and safely. The photos

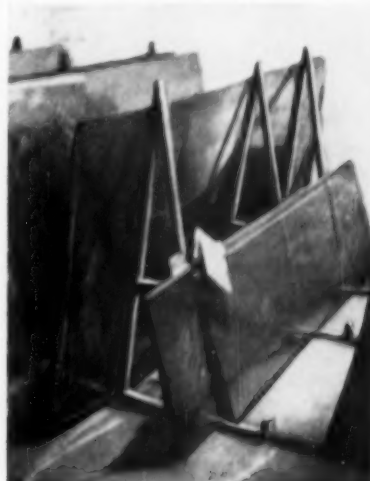
originally appeared in the German industrial safety publication, *Aufklärungsblätter für Arbeitsschutz*, published by *Der Senator für Arbeit und Socialwesen Berlin*. Hermann Feigl, Berlin, Germany, translated the captions.

—Turn page

**ELECTRIC LIFT TRUCK** is designed to be controlled by a man walking behind it. Safety device on top of hood discourages riders.



**THIS RACK** will safely store different size metal sheets.



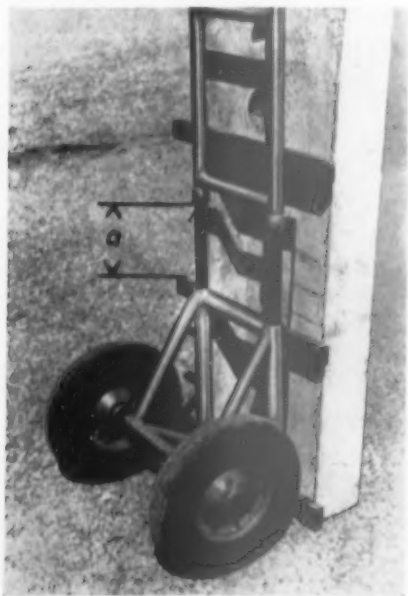


**GUARDS PAINTED** with high-visibility stripes protect workers from sharp corners of steel sheet.

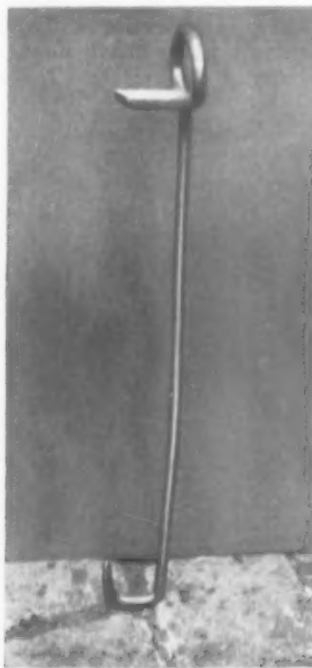


**"BAG TEETER-TOTTER"** enables worker to lift bag easily to shoulder height.

**TELESCOPIC FRAME** of this hand truck enables the worker to move the center of gravity of the load within distance "a" directly over the wheels.



**CARRYING HOOK** with a "distance point" at the handle keeps hand from being squeezed.



**ROLL AT BOTTOM** of carrying hook enables worker to move metal sheets easily over even floors.





# Legal Aspects of Safety Rules

**Management's right to establish and enforce plant requirements is subject to certain limitations. Safety rules are no exception**

By **RUSSELL G. ROGERS**

**I**T'S trite but true that the "best" accidents are those that never occur. And education, engineering and enforcement are designed to prevent accidents and promote the health and welfare of employees.

Just as employees must be educated to be safety-minded, so must they be educated as to the wisdom and necessity of rules adopted for the mutual benefit of them and their employer.

Likewise, just as an employer plans and engineers safety devices and lays out a plant to prevent or minimize accidents and injuries, so must he lay out and construct reasonable safety rules.

## **Use Oats—Not a Whip**

But more important, employees must be made to want to abide by rules. If unreasonable and improper, or improperly engineered or adopted, rules won't be accepted by employees or their representatives—and without acceptance rules are doomed to failure. It's an old saying, "You can lead a horse to water but you can't make him drink." Neither can safety rules be rammed down the throats of employees or their unions. Perhaps better is this Russian proverb: "Use oats and not a whip to drive the horse."

RUSSELL G. ROGERS, L.L.B., is an attorney in the legal division of Remington Rand Division of Sperry Rand Corporation. The views expressed in this article are those of the author, and not of Sperry Rand Corporation.

Only by education and engineering of proper safety rules can acceptance of them be obtained—and without acceptance, one can't hope for their enforcement.

Before discussing the three E's of safety rules, let's look at management's right to establish rules. (What is proper and reasonable in dealing with unions is a good guide in nonunion plants where employee acceptance also must be sought.)

Management has two prerogatives: absolute and limited. The first are those rights of management in which it claims absolute discretion and which aren't subject to prior or subsequent union concordance. In other words, absolute management powers—which may vary from industry to industry—are those outside the scope of collective bargaining.

Most companies are subject to various municipal, state and federal regulations covering working conditions. Compliance with these regulations is not only the right but the duty of employers and is outside the scope of collective bargaining.

## **"Absolute" Rights Limited**

This is not to say that management can't do anything not required by law. But the "absolute prerogative" to do many things not required by law still may be subject to limitations.

For example, it's management's right to direct the working force and specify plant performance.

But this must be done in conformance with any applicable union agreement, especially provisions dealing with transfers, promotions, layoffs and recalls.

Even the right of an employer to move his plant to another city is limited if he makes the shift at such a time and in such a way as to constitute, under federal law, unfair labor practice. So few management prerogatives aren't limited somewhat. And establishment of safety rules is no exception.

Aside from rules employers must establish and enforce to meet federal, state and local requirements, establishment of plant rules—including those relating to the health and safety of employees—is more in the nature of limited management prerogatives.

Under a contract recognizing that direction of the working force is management's exclusive right and containing no restrictive provisions regarding plant rules, companies have a right—and, in many instances, perhaps a duty—to establish "proper rules" for protection of plant and employee.

## **A Big But!**

I emphasize proper rules because employers don't have a right to set up and enforce unreasonable or obviously improper rules. On this theory, most arbitrators recognize the right of employers to make plant rules without prior union okay . . . but—and that's a big but!

Employers (without first consulting the union representing employees affected) establishing safety or other plant rules must recognize the union's right to object to them.

Here are a few cases illustrating the point:

In one case it was held that the employer's action in issuing a pamphlet setting forth rules of conduct and providing penalties (including discharge) for their violation, did not, as contended by the union, constitute a contract violation, since the contract contained no provision referring to issuance of an employee manual. The contract did, however, reserve management's right to direct

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**CONSTANT** vigilance is needed to keep housekeeping up to standard. Here the inspection committee finds boxes outside the aisle marker.

## Housekeeping: Engineered And Routine

More than simply "a place for everything," housekeeping involves planning—wherever materials are moved and whenever equipment is installed

By **ROBERT CLAIR**

**F**ROM plant gate to the shipping platform, industrial housekeeping is a major management problem. It affects safety, morale, and the conservation of space, time, material, and effort. It reflects the efficiency of work being done. In achieving and maintaining industrial good housekeeping, production methods are often improved.

Housekeeping is a familiar word, yet for our purpose, it is difficult to define completely or adequately.

For instance, a popular definition is "a place for everything and everything in its place." Though this description is often used, it infers an impossible condition. Since one of the essentials of production is that tools and materials must move in all processing operations, many things at any given

time cannot be in their "proper places."

Looking at it from the opposite viewpoint, poor housekeeping is a condition resulting from ineffi-

cient working methods—generally represented by inadequate timing and/or planning of processes or operations being conducted.

This indicates that poor house-



**BARRELS** for clean rags and oily rags placed side by side encourage neatness and avoid a serious fire hazard. (Pure Oil Company)

**ROBERT CLAIR** is Assistant Vice-President, Liberty Mutual Insurance Company, Boston, and Second Vice-President, American Society of Safety Engineers.

keeping is primarily an engineering problem and that the solution is better timed and more efficient work methods.

For the purposes of this study, therefore, we define industrial good housekeeping as a safe and orderly condition of neatness, arrangement, cleanliness, efficiency, and facility produced by engineered and routine housekeeping.

On this basis, it is obvious that industrial housekeeping is not merely a job for the clean-up squad, the porters, the janitors, or some other special group of workers. An adequate number of janitors or porters should, of course, be provided. The ideal housekeeping situation would probably be found where none of such employees are needed.

Industrial good housekeeping may be achieved, therefore, by:

1. Engineered housekeeping, consisting of (a) the planned movement and material and production wastes and (b) the proper installation and maintenance of equipment and tools.

2. Routine housekeeping, consisting of continuous, cooperative effort on the part of individual workers and janitors to maintain conditions of neatness, arrangement, cleanliness, efficiency, and facility.

### Engineered Housekeeping

**Movement of material.** Good housekeeping in most plants begins with adequate facilities for receiving and storing incoming raw stocks. The most important single factor in good housekeeping is the planned flow of material from this point on to reduce congestion, unnecessary rehandling, breakage, and spilling.

Such planning is largely a matter of plant layout, materials handling, and well-organized operational procedures. Obviously, the more closely material flow is controlled, the easier and less costly is housekeeping. If congestion of material, for example, is the apparent cause of cluttered floors, there is little point in stressing the "clean-up and pick-up" idea—for there's no place to put the "picked-up" material.

The basic answer may lie in providing better storage facilities, exercising closer control of material flow, rerouting materials,

### 15 HINTS FOR BETTER HOUSEKEEPING

1. Maintain an adequate janitor force.
2. Establish a printed list of reasonable rules.
3. Provide enough clean-up equipment. Mechanize where practicable.
4. Direct supervisors to check on housekeeping and follow through on rules.
5. Supply enough well-constructed trash containers.
6. Set up a schedule for frequent emptying of containers.
7. Mark aisle lines and keep them maintained.
8. Provide adequate storage facilities for inactive stock and stock in process.
9. Get rid of obsolete stock, parts and waste.
10. Keep floors, ramps and stairs in good repair.
11. Provide adequate lighting—both general and supplementary.
12. Clean windows, skylights and lighting fixtures regularly.
13. Set up a system and facilities for control of hand tools.
14. Provide splash guards and drip pans where needed—also oil absorbents.
15. Allow employees enough time to keep workplaces in order.

speeding up handling or processing operations, or rearranging operations. In other words, housekeeping must be engineered to keep materials from piling up and producing "blocks" which, in general, are the fundamental cause of most poor housekeeping conditions.

**Waste disposal.** The disposal of waste and scrap regularly pro-

duced should be planned as carefully as the handling of stock in process. Whenever possible, waste should be dropped directly into containers for disposal without rehandling. Where this is not possible, a frequent clean-up should be arranged to prevent excessive accumulations. If waste is cleaned up regularly, it can be handled with a minimum of expense and

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SIGN seems a bit ironical, doesn't it? This picture tells its own story.



# You Can Live With Heat

Even though you don't like it . . .

Here are some hints for survival

**M**OST people look forward to summer with its vacations, motor trips, swimming, boating, gardening, and shedding overcoats and galoshes.

But summer has some drawbacks, too. In addition to heat and humidity, there are more or less serious hazards on and off the job.

Some sun devotees try to follow the example of highway workers whose skins above the waist have acquired rich tones of walnut and mahogany. The result is days and nights of misery, and more work for the plant medical department.

Perspiration increases the chances of heat exhaustion.

Workers object to protective garments.

There is an increase of traffic on the highways and a week-end trip can be exhausting even when there has been no accident.

People lose more sleep as a result of hot living quarters, and late parties when it's too hot to sleep, anyway.

There is more exposure to poison ivy and other harmful vegetation.

More dust and other foreign matter is blown around and some of it lands in eyes.

More bites from insects, snakes and dogs are reported.

An article on summer heat in the April issue may seem like jumping the gun to people in the northern half of this country who are still shivering. But already in

the deep south heat and humidity are beginning to get in their work.

Air conditioning is steadily growing. But it will be a long time before every workplace, home, automobile and public conveyance will have its own climate tailored for personal comfort.

Remedies for beating the heat are almost as numerous as those for curing the common cold, and some of them just about as effective. They involve psychology, medicine and engineering.

Admittedly, thinking and talking about the heat doesn't help the situation, though it may provide an emotional outlet which can be helpful. Any attempt to convince people that the heat is just an illusion is sure to rub them the wrong way. Like this naive head on a story in a company magazine: "Live With the Heat—and Like It."

Upper limit for comfortable temperatures is around 86 F. But heat isn't the only factor. Humidity must be considered, too. For example, with temperature at 85 F. and a relative humidity of 30 per cent, a man can work at almost 99 per cent of his normal efficiency. But as the humidity approaches 100 per cent, efficiency drops to about 85 per cent.

Low efficiency, however, isn't the only thing to worry about. Acute heat diseases, such as heat cramps and heat exhaustion, may strike workers down under unfavorable working conditions.

But even more important are the sustained though less drastic exposures. Initiative and alertness may fall off, making the individual more susceptible to accident and illness.

Summer illnesses include:

Pneumonia, influenza and rheumatism—resulting from intense radiant heat and sudden temperature changes.

Chronic inflammation of nasal passages—caused by work in a steamy atmosphere.

Heat rash (prickly heat)—caused by prolonged sweating in high humidity, particularly when night temperatures are high and there is no relief from sweating. Sleep becomes difficult and morale and efficiency drop.

Digestive upsets—combination of hot weather, irregular hours, anxiety, sudden temperature changes and too many cold drinks may bring on acute attacks or prolonged below-par feeling.

Fumes, dusts, gases, etc.—faster breathing in hot weather results in an increase in the amount of air contaminants inhaled.

Why wait for sizzling weather to start corrective measures? Here are a few that have been found helpful.

## 1. The Employee.

Healthy people stand the heat better and some can stand more than others. Generally, the only way to determine an individual's tolerance is to try him on the job.



Short, daily exposure during the first week on the job will show up his fitness for hot work. If he is reasonably fit, his tolerance should be up to 80 per cent at the end of the week. In another week of increasing exposures he should be able to keep up with the veterans.

Anything that can be done to control temperature will make it easier to keep men on the job.

Men exposed to high temperatures need health supervision. That means control of hours of work, fatigue, nutrition and use of alcohol, and periodic physical examinations.

## 2. Salt and Water Replacement

The sweating mechanism is one of nature's ways of cooling the body. Sweat is a weak solution of sodium chloride (common salt) and water with urea and small amounts calcium, iron, potassium and lactic acid. Loss of these chemicals is not serious unless perspiration is profuse or strenuous work is performed for a long period in an excessively hot atmosphere.

In such circumstances water and salt must be replaced. Some 70 per cent of the body's weight is composed of water and daily loss may vary from 3 to 10 quarts under extreme conditions.

Salt deficiency leads to muscular cramps in the legs and abdomen. Dehydration or heat exhaustion may be the aftermath of excessive fluid loss.

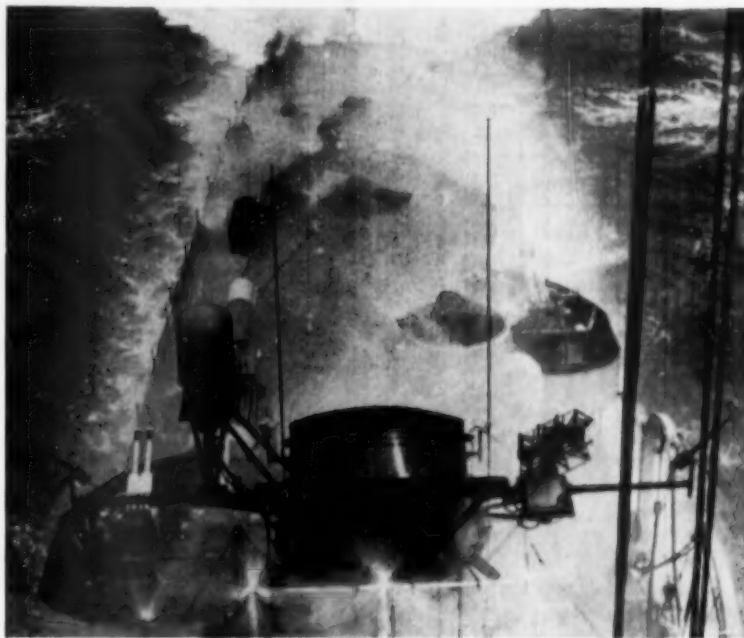
To compensate for salt loss through perspiration, salt tablets have become widely used. Dispensers located by the drinking fountain are in use in most plants. If the plant's supply of drinking water is salted, it should be under medical supervision. Persons on salt-restricted diets should follow their doctor's orders.

One of the benefits of taking extra salt is the thirst it creates. It makes you drink more water and the extra intake of water is just as important as the salt.

Fruit juices are good too—if not sweetened too much. They appeal to the palate and supply important vitamins.

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## Washdown Protects Ships In Atomic Fall-Out



**MAN-MADE STORM** enveloping Navy destroyer is new washdown system to cleanse away lethal radioactive particles from fall-out during and after an atomic or hydrogen bomb blast.

WASHDOWN SYSTEMS have now been developed to protect every class of Navy ship from minesweeper to aircraft carrier from contamination by radioactive fall-out during and after an atomic or hydrogen bomb blast.

A protective, cleansing spray, drenching all exterior surfaces above the waterline, makes it possible for the ships to continue in action without exposing the men to lethal radioactive particles that otherwise might remain for weeks or even months on decking and superstructures.

The systems, developed by the Grinnell Company and the Navy's Bureau of Ships, are designed so that they can be readily installed by the ships' crews. The company has worked out 120 different designs to permit what amounts to "do-it-yourself" installation.

By using spray nozzles—as many as 500 on a large carrier—and lightweight rigid vinyl plastic pipe, the system can wash down in combat situations a ship like the U.S.S. *Forrestal* with

thousands of gallons of sea water a minute.

In earlier tests some Navy vessels were equipped with washdown systems using metal pipe and fittings, but the added weight posed a serious problem. On a destroyer, for example, the earlier washdown systems added so much weight to the ship that its combat effectiveness might have been impaired.

The answer was rigid, high-impact vinyl plastic pipe, made from B. F. Goodrich Chemical's Geon resin. It is one-fourth the weight of steel pipe and also much easier to install because it uses simple, but extremely strong solvent-welded joints.

Its added advantages, besides light weight and the elimination of threaded joints, company engineers said, are flexibility, high-impact strength, non-corrosiveness, and the fact that it is not affected by freezing or tropical temperatures. Sea water has absolutely no deteriorating effect on the plastic material.

There are five on each hand.  
Gloves and creams are available for every specialized need



SOME COMPANIES supply workers with more than a dozen types of gloves, from cotton to asbestos. Here model tries on neoprene gloves used for handling acids.

## Ten Reasons For Hand Protection

**T**O A great extent, the quality and quantity of production as well as the reputation of a plant are literally in the hands of its workmen. Hands have a definite cash value, which industry must pay when disability occurs on the job. One survey shows that hand and finger injuries were involved in 25 per cent of reported accidents and in 16 per cent of the cases where compensation was paid.

When we add to these the innumerable cuts and scratches which are never reported but invite infection, the problem of hand protection assumes major proportions.

Aside from machine guarding, hands are protected principally

by coverings of two types. The first includes such items as gloves, mitts, pads, finger stalls, etc. The second consists of creams and ointments for use when protective garments cannot be worn.

There are three considerations in selecting hand protection:

1. Is it comfortable?
2. Is it adequate?
3. Will it interfere with production?

Generally speaking, gloves should not be worn when operating revolving machinery. Certain operations, however, because of the nature of the material and the method used, will require some kind of hand covering. Examples are buffing and polishing on high speed lathes, where parts become

too hot to handle with bare hands.

Finger movement is necessary for most work and this complicates the problem. Rigid coverings are not practicable, so protection must be a compromise. Gloves, mittens, finger stalls, and hand pads are made in a variety of styles of many different materials. The safety man should study existing hazards and prescribe the equipment best suited to meet the needs of various jobs.

Some of the more common handling operations and the types of protective materials used are:

*Liquids*—Rubber, synthetic rubber and plastic covering.

*Solids (not hot)*—Leather, canvas, or knitted fabrics.

*Hot objects*—Asbestos or a knitted

glove commonly called a "hot mill" glove.

There are, of course, many types, weights, and grades of leather gloves. These include split leather, grain leather, lightweight kid, leather over wool, etc. Some are reinforced with metal studs or ribbons; others are stitched with steel thread to increase their durability. Before deciding on the use of reinforced gloves it is well to study the job carefully to determine the requirements for protection. Metal-studded gloves should not be worn around electric apparatus, for example.

Other common materials are canvas, duck, terry cloth, rubber, plastic, metal mesh, neoprene coated drill, wool, wool felt, asbestos, and combinations of these.

**Linemen's gloves.** Electric utilities go to great lengths in selecting rubber gloves of specified dielectric strength for linemen working with high voltages. These gloves are inspected regularly for punctures, tears, and abrasions. For an on-the-job test, the cuffs should be rolled up and air forced into the fingers and palms of the gloves. If there is leakage, the gloves should not be used. For some jobs, leather protectors should be worn over rubber gloves to protect the rubber.

An electrical glove testing serv-



**FOR ROUGH, sharp, and hot objects,** gloves of heavy twisted loop pile provide good protection.

ice should be provided, with regular testing intervals determined by amount of use, type of work, and the voltages involved. If there is doubt about the insulating quality of the gloves, they should not be used.

Private testing laboratories can be relied on for accurate testing. In some cases they will keep individual company records on the physical condition of the gloves and the time schedule for re-testing. Where no laboratory is available, small firms usually can have tests made at the local public utility.

#### **Synthetic and natural rubber**

gloves are available in a wide variety of sizes, weights, and lengths. Mechanical strength, pliability, and the grade of material are important considerations in selecting them. For heavy industries, these gloves are supplied with inner linings of fabric for added protection and wear. Canvas gloves dipped in latex or plastic are often used for light cleaning operations.

Natural rubber gloves are ineffective against some liquids and solutions. In these instances, synthetic rubber and other compositions have been found satisfactory. Gloves of this type protect against all types of petroleum products; caustic soda, and tannic, muriatic, and hydrochloric acids. They are also recommended in the handling of sulfuric acid, since less deterioration takes place than with natural rubber.

Gloves of natural rubber are preferred for handling certain other acids and for sandblasting.

When rubber or synthetic gloves are worn continuously over a long period, a lightweight cotton liner should be provided. If no liner is available, talcum powder should be shaken into the gloves before putting them on. Rubber gloves should be washed frequently inside and out.

Rubber and asbestos gloves should be long enough to come

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**LEFT:** Gloves are needed on many material-handling jobs. Leather apron helps here, too.

**LEATHER PALM** guards are used for handling rough metal.





# SAMMY SAFETY'S NOTEBOOK

By Arthur S. Kelly

Industrial Department, NSC



## Storage for Tool Chests

This rack provides excellent storage space for tool chests. The shelves are movable to give easy access to personal tools. This is a well as a convenience for shop housekeeping improvement as mechanics and toolmakers.

Developed at the Lackawanna plant of the Bethlehem Steel Co.

## Up Periscope!

There are two good ideas here, but only one counts. The man wants to see what's in the top tote box without getting a ladder or climbing up the boxes. He is holding an ordinary rear-view mirror fastened to the end of a piece of aluminum tubing.

The other idea is only opinion, but the design of the tote boxes seems particularly good. The steel angle stock is formed to make a loop for handling by crane. The flared ends of the angle fit over the loop of the box below and give added rigidity to the stack.

Submitted by Howard K. Huntington, International Harvester Co., Chicago.







### Fire Protection for Rubbish Trucks

Here is a built-in sprinkler system for idle rubbish trucks filled with trash and paper.

After two fires from spontaneous ignition at the Plymouth plant of Burroughs Corp., Roy Tucker, maintenance foreman, conceived the idea of installing a conventional sprinkler head inside the steel-



enclosed body of the truck. When the truck is not in use, a hose is connected to the half-inch water pipe attached to the sprinkler.

Shown at right is a protective wire screen (open at bottom) installed around sprinkler head to prevent damage.

Submitted by Stuart Curtis, Burroughs Corp., Detroit, Mich.

### Fire Research Building Opens in San Antonio

SOUTHWEST RESEARCH INSTITUTE, San Antonio, Tex., has completed construction of a new \$35,000 fire technology research building—only one of its kind in the country available for industrial use—and will use the new facility to develop better methods of protecting lives and property from fire.

Southwest Research Institute is the only research center in the country which has a specialized fire technology program designed to fit the needs of industry, and the building was constructed with the encouragement of many industries. Firms advancing money against future research use included Celotex Corp., Gypsum Association, Insulation Board Institute, Johns-Manville Corp., National Gypsum Co., Owens-Corning Fiberglas Corp., Rohm and Haas Co., United States Gypsum Co., and Wood Conversion Co.

Research equipment in the fire technology building includes a 25-ft. fire tunnel for evaluating materials used for interior building finishes. This is the second such furnace in the country available to industry. The other is at the Underwriters' Laboratories in Chicago.

Southwest Research Institute's fire technology research facility is in a 20 x 40 ft. insulated frame building lined with incombustible material and resting on a concrete slab. Atmospheric conditions within the building are subject to rigid control. The fire tunnel was built in accordance with the American Society for Testing Materials Tentative Method of Fire Hazard Classifications of Building Materials.

The fire tunnel is lined and has a removable cover on which materials to be evaluated are placed. Air is drawn through the tunnel at a rate of 200 fpm. Temperature and humidity are also controlled. Two gas burners at one

end provide a flame simulating conditions that may develop in a severe fire.

Scientists can observe the action of the fire on materials tested through glass windows on the side. Smoke density and the heat generated by various samples, are measured and the toxicity of gases can be checked.

The rate at which flame spreads down the surface of the sample is recorded as well as the temperature and smoke that develops at the exhaust end. Provision is also made for taking samples of the hot gases for analysis when necessary. This facility makes it possible to simulate conditions in a room, corridor, or building in which a serious fire has started and to expose the sample materials to the same conditions that are found in these fires.

The need for such equipment is shown by the fact that most building laws and similar regulations restrict the use of highly flammable interior finishes.

# HAND SOLDERING AND BRAZING

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1. Soldering and brazing, the joining of metal parts by means of a readily fusible alloy, is one of the oldest and most common operations in industry. When the solders used have a melting point above 800 F, the operation is referred to as "brazing." Automatic can soldering is not discussed in this data sheet.

2. During either soldering or brazing operations, certain health and accident hazards may exist, and due consideration should be given to them. In this data sheet, methods of soldering, types of solders and the potential hazards of each, and control measures, are discussed.

3. Principal effects from improperly controlled conditions or practices may be lead poisoning, irritation from fluxes, burns, dermatitis, and quite possibly, fire. A most important step toward establishment of controlled conditions is to check the concentration of toxic fumes and irritants at the breathing level of the operation.

## Soldering Methods

4. Hand-soldering operations generally can be divided into these types:

- a. Electric iron soldering
- b. Gas-heated iron soldering
- c. Dip tinning
- d. Torch or flame soldering

## Electric Iron Soldering

5. The electric-heated iron is used on lighter operations, such as soldering electrical connections in radios and other instruments, as well as for making seals over small openings. For this type of

This Data Sheet is one of a series published by National Safety Council, reflecting experience from many sources. Not every acceptable procedure is necessarily included. Data Sheets should not be confused with American Standard Safety Codes, federal laws, insurance requirements, state laws, rules and regulations, or municipal ordinances.

work, only small quantities of heat are drawn from the irons. This type of iron requires less space and ventilation than does the gas-heated iron and is more comfortable to use.

6. All electric irons, their wir-

ing, and connections should be of a type approved by a recognized approving agency, such as Factory Mutual Engineering Division or Underwriters' Laboratories, Inc. Electric irons should be kept in good condition to prevent electric shock and fires. An iron stand with a thermostatic control will keep the iron from overheating. Whenever possible, use of a 6-volt iron is recommended; the transformer should be grounded.

7. When not in use, the soldering iron should be placed where the operator is not likely to come in contact with it and where it

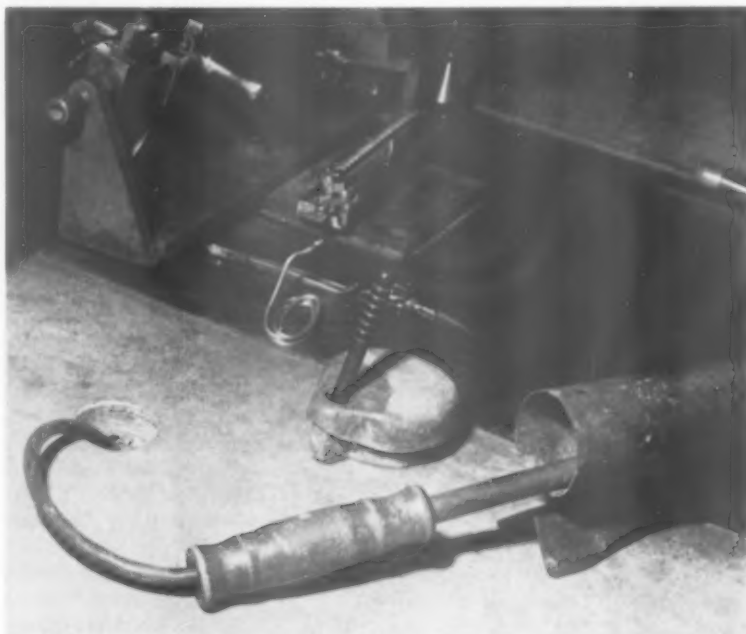


FIGURE 1. A hole in the bench top helps to prevent tangling of the cord of this electric soldering iron. The iron rest keeps the iron from rolling and holds it off the bench top. The flux is covered in its lead dish except for the hole in which the applicator is placed. (Courtesy American Cyanamid Corp.)

will not cause a fire hazard. Placing the heated iron in an expanded metal receptacle in a convenient location will control this hazard. The rapid-heat type of solder gun shuts off when the trigger is released and it is laid down.

8. A soldering iron should not be allowed to come in contact with flammable material, and flammable solvents should be removed from the vicinity of the operation.

9. In some remote, short-duration soldering operations, where electricity is not available or convenient, a soldering iron which is heated by a chemical cartridge may be used. Energy equivalent to about 250 watts is developed. Working temperature of 800 F is reached in a matter of seconds and is retained for about five minutes. Except for the fact that this iron presents no electrical problems, its use requires the same safe practices as those required in the use of an electric iron.

10. Rosin is usually the flux used in electric iron soldering. The flux is generally found in the core of the wire solder or as a solution. There are occasional complaints about irritation from rosin flux.

11. Since the health hazard from lead is usually not great where electric-iron hand soldering is used, process ventilation may not be necessary for either lead or rosin fumes. It does, however, greatly improve the working comfort of the operator. Work and ventilation should be arranged so that fumes do not reach the operator's face.

12. Cleaning of copper tips by means of a file is preferable to cleaning on a scratch wire brush mounted on a machine grinder. Cleaning by means of a file causes less dust.

### Gas-Heated Soldering Irons

13. Most of the heavier soldering operations are done with gas-heated irons. In some cases, the burner may be an integral part of the iron, but more often the

iron is heated in a small gas furnace. Furnaces should be located so as not to present a fire hazard to the building and its contents or a burn hazard to employees. Unless correctly ventilated, these furnaces may cause lead contamination of the air. Forced ventilation of the muffle furnace is desirable for control of this hazard.

14. The furnaces cause a further problem in summer months because of the heat that surrounds them. Shields help to reduce the operator's exposure to radiant heat.

15. With gas-heated soldering irons, the lead hazard is usually greater than it is with electric irons since larger amounts of solder are heated. The irons are usually not thermostatically controlled, as are many electric irons, and can be overheated, causing more lead fume to be created. Other possible hazards may be exposure to carbon monoxide from poor combustion and gas poisoning from leaks.

16. This type of iron quickly becomes dirty and corroded and, therefore, requires more frequent cleaning. A dirty iron is generally cleaned with ammonium chloride (sal ammoniac) and fresh solder.

17. Cleaning copper tips in quantity on a scratch wire brush or grinding wheel requires a hood and exhaust ventilation. Cleaning by means of a file causes less dust, but even so the dust should be removed daily.

18. Fluxes used are generally acid in nature or primarily chlorine compounds. Normally, fluxes such as hydrochloric (muriatic) acid, ammonium chloride (sal ammoniac), zinc chloride, or combinations of these are used. Since lead chloride is much more volatile than elemental lead or lead oxide, the use of fluxes containing chloride tends to increase the lead hazard. Vapors from the fluxes themselves are frequently very irritating to the mucous membranes and can also produce dermatitis from excessive contact with the skin.

19. Exhaust of the soldering

operation itself, as well as of the muffle furnace, is desirable for controlling the lead exposure and the vapor from the flux.

20. If powdery drosses spill on the work bench or floor or around the gas furnaces, they create a lead hazard even when work is done only intermittently. Good housekeeping around these processes is highly essential.

### Dip Tinning

21. In many operations where parts are to be soldered, the process can be hastened by first tinning the surfaces to be joined. Tinning is a process of coating a clean metal surface with a film of solder by dipping the part into a pot of molten solder. Some of the pots are heated by gas; some are heated electrically. These solder pots should have the heat input thermostatically controlled to prevent overheating.

22. The hazard connected with these pots is largely due to the formation of lead oxide on the molten metal surface or along the edge of the pots, especially when overheating occurs and poor housekeeping exists. Agitation of the surface is also a factor in releasing lead oxide to the workroom air.

23. The pots should be kept clean, and the powdery dross should be removed with caution to prevent lead dust from spreading into the breathing atmosphere of the workmen. A local exhaust system is recommended.

24. Usually the part to be tinned is first dipped into an acid flux to remove metallic oxides from the surface. The acids used frequently evolve enough vapor or mist to be irritating when breathed and should, therefore, be exhausted.

25. A film of flux usually remains on the metal part and is vaporized when the part is tinned. These fumes are particularly irritating to the mucous membranes of the nose and throat. Air exhaust surrounding the tinning operation is desirable to remove the irritating acid fumes produced

and also to minimize the lead breathing hazard.

26. In some production tinning areas, the acid concentration in the breathing zone is not sufficient to demand forced ventilation. A close check should be made.

27. Sometimes, fine charcoal is sprinkled over the surface of the solder pot to reduce the formation of lead oxide, which is mostly responsible for the health hazard. As the temperature and area of the pot are increased, the lead hazard is correspondingly increased.

28. In tinning the bare ends of insulated electrical conductors, irritating fumes may occasionally result from overheated insulation. The insulated part may be immersed beyond the portion of bare metal, or the part to be tinned may be held too long in the heated solder.

### **Torch or Flame Soldering**

29. Flame soldering is used where large quantities of solder are necessary and where large quantities of metal need to be preheated. This method may also be used where the melting point of the solder is high, as in the case of silver solders.

30. With lead solders, the high temperature causes the lead to form a powdery dross more quickly and, therefore, the lead hazard is greatly increased. The degree of contamination is dependent on several factors, such as size and temperature of the flame, proximity of the flame to the solder, and care taken in housekeeping.

31. In silver soldering, fluoride fluxes are commonly used. Fumes from the heated flux may cause nasal irritation. This condition can be prevented by adequate ventilation.

32. Since many silver solders contain cadmium, it is also desirable to control the concentration of cadmium fumes in the breathing atmosphere by exhausting at the source. Since fluoride fluxes may cause a serious dermatitis,

provision should be made for prevention of skin contact.

33. In many cases where considerable movement of parts being torch- or flame-soldered is involved, the operators may be burned by the heated metal. Gloves made of flame-resistant material, such as asbestos or chrome-tanned leather, may be worn to provide the necessary protection.

34. Flame soldering and brazing is done with a variety of torches: oxyacetylene, natural gas and air, air-propane, air-butane, and gasoline blow torches. Oxygen is sometimes used to replace the air in these combinations.

35. Regardless of the flame source used, the equipment should be maintained in first-class condition and must be used in accordance with established safe practices. It is desirable to keep a record of inspection and maintenance.

### **Precleaning Parts To Be Soldered**

36. Frequently, before fluxing, the parts need to be cleaned by a chemical cleaning operation to ensure proper soldering results. These precleaning operations usually require the use of strong acids or toxic solvents.

37. Many parts may be cleaned with an acid cleaning process known as "bright dipping." These so-called "bright dips" are usually a combination of concentrated nitric and sulfuric acids which remove the oxide surface from metals to be soldered—copper and brass, particularly. The reaction of copper with nitric acid produces highly toxic brown fumes of oxides of nitrogen.

38. Since the maximum allowable concentration for these fumes is as low as 5 parts per million, strong local exhaust ventilation is necessary to remove them from the operation to a point well above the roof of the building.

39. Organic solvents are frequently used for degreasing parts. Some of these solvents are chlorinated, such as trichloroethylene,

perchloroethylene, or methyl chloroform. Others are aromatic solvents, such as xylol, toluol, alcohol, etc.

40. Frequently, nonflammable (or high flash) solvents are used for cleaning in order to eliminate the fire hazard, but little thought is given to their possible toxic properties. Carbon tetrachloride is being practically eliminated from industrial usage because of its very high toxicity. Other chlorinated solvents are frequently used because of their lower toxicity.

41. The aromatic solvents are flammable, and all are toxic. Local exhaust ventilation for all aromatic and chlorinated solvents is usually necessary.

### **Types of Solders Used**

42. A variety of solders can be used, depending on the application (see table). Due consideration must be given to the toxicity associated with each solder used. Some solders commonly used are lead-tin, silver, antimony-tin, phosphorus-copper, and alloys containing large amounts of zinc.

### **Lead-Tin Solders**

43. Lead-tin solders are most commonly used and frequently cause the most serious health hazard due to the large amount of lead. Where this type of solder is used, the work atmosphere should not contain more than 0.15 milligram of lead per cubic meter of air for breathing during an eight-hour day.

44. The most commonly used fluxes usually contain chlorides, such as hydrochloric acid or zinc or ammonium chlorides. These fluxes tend to increase the health hazard.

### **Silver Solders**

45. Many silver solders contain cadmium in varying amounts. The hazard from use of a silver solder is due primarily to the cadmium content. When silver solders are used, the atmosphere should not be permitted to contain more than 0.1 milligram of cadmium per cubic meter of air.

46. The fluoride fluxes com-



monly used with this type of solder should also be considered as potential health hazards, and local exhaust ventilation may be necessary to eliminate the health hazard from either cadmium or fluoride or from both.

### Antimony-Tin Solders

47. Antimony-tin solders are often used as brazing alloys. The potential health hazard is moderate since harmful amounts of antimony or tin generally are not formed. It is advisable, however, to determine whether a safe condition does exist by taking air samples. At present, 0.5 milligram of antimony per cubic meter of air is accepted as a safe limit for an eight-hour working day. The greatest hazard from the use of these solders comes from the chloride and fluoride fluxes used.

### Phosphorus-Copper Solders

48. Except for the fluoride fumes coming from the flux used with phosphorus-copper solders, the health hazard is usually slight. Phosphorus pentoxide fume may cause some respiratory irritation.

### Zinc Solders

49. Many of the alloyed solders, other than those already mentioned, may contain varying amounts of zinc. Generally, the hazard connected with these solders is slight.

50. The breathing atmosphere should not contain more than 15.0 milligrams of zinc oxide per cubic meter of air. Frequently, chloride and fluoride fluxes are used in this operation, and adequate local exhaust ventilation may be necessary.

### Aluminum Solders

51. The nomenclature for these solders is based not on their composition but on the fact that they are used primarily for joining aluminum parts. There are mainly two types: a low melting-point solder and a high melting-point solder.

- The low melting-point solder is usually composed of lead, tin, and zinc and employs a fluoride flux. The health hazard is mainly from the lead and the fluoride flux fumes.
- The high melting-point solder may be an alloy of cadmium and zinc with which a fluoride flux is used. Control of cadmium and fluoride fumes given off during soldering is of prime importance.

### Control Measures

52. For proper safety control in any soldering application, the following factors must be considered:

- Ingestion of toxic materials must be prevented, and good personal hygiene must be required.
- Physical examinations should be given at least annually to employees

- who work on soldering operations.
- Air samples should be taken regularly.
- Protective equipment should be worn as conditions require.
- Adequate exhaust should be provided.
- Normal solder temperatures should be maintained to prevent excessive volatilization and oxidation of the materials.
- Good housekeeping and maintenance of equipment are essential.
- Precautions must be taken to prevent fire.

### Preventing Ingestion

53. With solders, the greatest health hazards are created primarily by lead, cadmium, zinc, antimony, and fluorides. Care should be taken to prevent ingestion of these toxic materials, as well as to prevent breathing fumes containing them. For this reason, eating and storage of lunches should not be permitted in the vicinity of soldering operations. Provision should be made for eating and storing lunches in a location entirely free from toxic solder materials.

54. Water fountains should be so located that they will not become contaminated with these toxic soldering materials.

55. Workers should wash their hands and faces thoroughly, preferably with warm water and

**TYPES AND APPLICATIONS OF SOFT SOLDERS  
(NOMINAL COMPOSITION IN PER CENT)**

Solder No.	Composition					Melting Range, °F		Typical Uses
	Tin	Lead	Antimony	Silver	Arsenic	Liquidus	Solidus	
1	99.8	..	..	..	..	450	450	Electrical parts
2	62	38	..	..	..	361	361	Eutectic solder
3	60	40	..	..	..	370	361	Electrical and general applications
4	50	50	..	..	..	420	361	
5	40	60	..	..	..	460	361	
6	30	70	..	..	..	500	361	General-purpose low-tin solders
7	20	80	..	..	..	525	361	Body solder
8	15	85	..	..	..	550	361	High-temperature solder
9	5	95	..	..	..	595	570	Wiping solder for lead pipe and cable sheath
10	38	62	..	..	0.1	460	361	Silver-lead solders for high-temperature use
11	32	66	2	..	0.1	465	367	
12	..	97.5	..	2.5	..	590	590	
13	..	96.5	..	3.5	..	603	590	
14	3	92	5	..	..	545	463	High-temperature solders
15	1	97.5	..	1.5	..	589	589	

The above alloys Nos. 2 to 9, inclusive, may or may not have antimony, silver, or bismuth added to impart special properties. So-called fuse alloys are not included since their use as solders is very limited.

Antimony tends to increase surface tension in the solder deposit, but when force is exerted to release surface tension, its flow properties are better than tin-lead solder of the same tin content.

Silver and antimony both tend to increase both the liquidus and

solidus temperature. Silver tends to lessen the decrease in strength due to aging.

Bismuth added to solders tends to decrease the liquidus and solidus temperature, but the solder is both hot and cold short. Due to its brittleness, bismuth solder should not be used as a gas seal or for joints subject to vibration.

Aluminum solders are generally of tin-zinc or tin-cadmium composition, most of the analyses in use being proprietary.

—From *Welding Handbook*, 3rd Edition, American Welding Society

soap, before eating and before leaving work.

### Physical Examinations

56. It is usually advisable to give physical examinations at least once a year to persons working on soldering operations. Some companies require semi-annual examinations.

57. A urine or blood analysis for lead should be included. It can be run routinely with sufficient accuracy by polarographic or spectrographic methods. These analyses will determine whether a person is breathing or ingesting excessive amounts of toxic materials.

58. Periodic urine or blood analyses are usually better indications of the amount of toxic materials taken into the body than is air sampling. Such tests will indicate poor ventilation or lack of ventilation, poor personal hygiene, or poor housekeeping.

### Air Sampling

59. It may be necessary to examine the air by taking samples for determining the amounts of toxic materials present. The electrostatic dust and fume sampler is one of various means for efficiently collecting fine fume and dust particles from the air. Gaseous and vapor flux constituents need to be collected by other appropriate means. Care must be taken to obtain representative samples of normal operations.

60. A definitely proved method of microanalysis for determination of these contaminants in urine, blood, and air must be used only by trained persons who have had reliable experience with the method. Otherwise, meaningful data will not be secured. If toxic concentrations are permitted to exceed safe limits, the operator is being subjected to a health hazard. Ventilation or some other means of protecting him from this danger should be used.

### Protective Equipment

61. If soldering must be done in a confined area for a short time where removal of toxic soldering fumes by ventilation is not prac-

tical, self-contained breathing equipment or a fresh air hose mask, with or without a blower, may be used. For low concentrations of fumes, a metal fume respirator may provide protection.

62. If the operator should notice the odor of flux or solder fumes or irritation to the nose, throat, or respiratory tract while wearing a respirator, he should leave the space immediately and go into fresh air. He should then determine whether the respirator is functioning improperly or is inadequate.

63. Where there is any possibility of oxygen deficiency, only an uncontaminated fresh air line respirator or self-contained breathing apparatus should be provided. All respiratory equipment should be approved by a recognized approving agency and should be maintained in first-class condition.

64. Eye protection should be provided to protect against spattering of either the fluxes or solders. Face shields are most desirable where much solder or flux spattering occurs. Otherwise, safety glasses or plastic protectors may be adequate.

65. Sometimes tinning operations cause burns on the hands due to spattering, so there may also be a need for gloves to provide protection.

66. The skin can frequently be protected against irritation by rubbing into the clean skin and under the fingernails a protective cream that is insoluble in perspiration and the flux. This protective cream should be free of potential skin irritants.

67. Since the skin is most sensitive under the fingernails, it is well to keep them as short as possible to prevent accumulation



FIGURE 2. In this insulated-conductor tinning operation, the transparent shield over the solder pot protects the operator's face from spattering molten metal. (Courtesy Rohm and Haas Co.)

of irritating flux and to facilitate better cleaning with soap and water and a small fingernail brush.

68. In some instances, the skin may be more easily protected by cotton gloves with an outer surface impregnated with rubber, neoprene, or suitable plastic coating.

69. For further protection of the operator, his shirt sleeves should be down, trousers should be long enough to extend over shoe tops, and shoes should be snug at the top (no "loafers").

### Exhaust

70. The design for exhaust ventilation depends upon the application. When it is necessary to install ventilation, the operation should be observed step by step so that the system will be designed to cause as little interference with the operation as possible and still provide control.

71. One of the simplest and yet most effective hood designs is a booth-like enclosure with an opening large enough to permit ease of working. In this type of hood, the fumes should be pulled directly away from the operator's breathing zone with a velocity not less than 100 feet per minute. Since the powdered dross from a solder pot can definitely create a breathing hazard, it is desirable to enclose the dross pot and solder pot in the same hood ventilation system.

72. Most ventilation systems require forced ventilation and cannot depend on a gravity hood without a fan to prevent a health hazard. The exhausts of all ventilation systems should be conducted above the roof of the building to prevent the fumes from re-entering the building.

### Temperature Control

73. Too few soldering pots have thermostatic controls. On small solder pots, they may not be necessary. On larger units, a thermostat located in the molten metal should be included as part of the equipment.

74. This thermostatic control should be so regulated that the



FIGURE 3. A battery of exhaust hoods installed for production soldering.

optimum soldering temperature is maintained. The thermostat should be set to shut off the heat supply to the pot at a temperature not much higher than the melting temperature of the solder.

75. If the temperature of the solder is allowed to go too high, excessive amounts of lead fume are evolved and excessive oxidation of the solder occurs. In the absence of a thermostat, the temperature can fluctuate considerably, causing poor workmanship and unhealthful working conditions.

76. Often, it is also desirable to have a second thermostatic control located among the heating elements for the pot. The shutoff temperature of the second thermostat will need to be established for the individual operation and unit. The advantage of a second thermostat is that it guards the other. If one thermostat should not function properly, the other will prevent hot spots or too rapid heating.

### Housekeeping and Maintenance

77. Good housekeeping and good maintenance of equipment are primary considerations. What would be considered good housekeeping in other kinds of work may be poor or only fair when applied to soldering operations.

An occasional cleanup is not efficient practice. Good housekeeping is a continuous procedure.

78. Metal cans with covers should be provided for collection of dross and drippings. Dross and drippings should be prevented from accumulating on table tops, floors, or equipment. Such accumulations contribute to a toxic dust health hazard, regardless of whether lead, cadmium, antimony, or other toxic material is used in soldering.

79. Ventilation and exhaust are most effective only when the systems are kept in good condition. A procedure should be established for periodically checking all equipment needed during the entire operation.

### Fire Prevention

80. It is preferable to conduct soldering operations in a location free from fire hazards. Noncombustible work benches should be provided. Exposed combustible material should, if possible, be moved out of the area. Otherwise, such material should be covered with asbestos blankets or flame-proofed tarpaulins.

81. Unless precautions are taken during soldering operations, serious fire or explosion hazards exist in the presence of combustible materials or flammable

dusts, gases, and vapors, or in or on containers which have held flammable liquids.

82. Clothing free of grease and of flammable liquids should be worn by the operator and others in the area.

83. For open-flame soldering in areas containing combustible materials, written permits issued by a competent and responsible person should be required before operations are begun. Then, a watcher equipped with suitable fire extinguishing equipment should be stationed on the job and directed to remain at least 30 minutes after the job is completed.

84. When overhead soldering is done, precautions should be taken to protect people and combustible material below the work.

85. All fuels used in solder-heating operations should be installed, handled, and stored in accordance with accepted standards applicable to flammable gases and liquids.

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#### ACKNOWLEDGMENT

The original draft of this data sheet was prepared by H. W. Speicher, Industrial Hygiene Engineer, Westinghouse Electric Corporation, as a project of the Health Maintenance Committee of the Automotive and Machine Shop Section, National Safety Council. This publication has been extensively reviewed by members of the National Safety Council and by representatives of chapters of the American Society of Safety Engineers. It has been approved for publication by the Publications Committee of the Industrial Conference of the National Safety Council.

Lots of men need two women: a secretary to take things down and a wife to pick things up.

## Microscope for Radioactive Materials

A NEW remote-controlled microscope developed by the General Electric Company at the Hanford plutonium plant, Richland, Wash., inspects materials emitting radiation so intense that its optics eventually go "blind."

Company scientists use the instrument to study changes that occur in the microstructure of metals exposed to chain-reaction bombardment. The information they gain is used to develop alloys and fabrication methods that will make atomic structures withstand increased radiation exposure.

Pieces examined in this work have been deformed by radiation and in the process have become ray emitters. As a result, the Hanford microscope is eventually damaged by these rays.

All work is done remotely inside the 38-ton steel cell which houses the radioactive sample. First, the sample is placed in the cell by means of mechanical "hands" powered by electric motors.

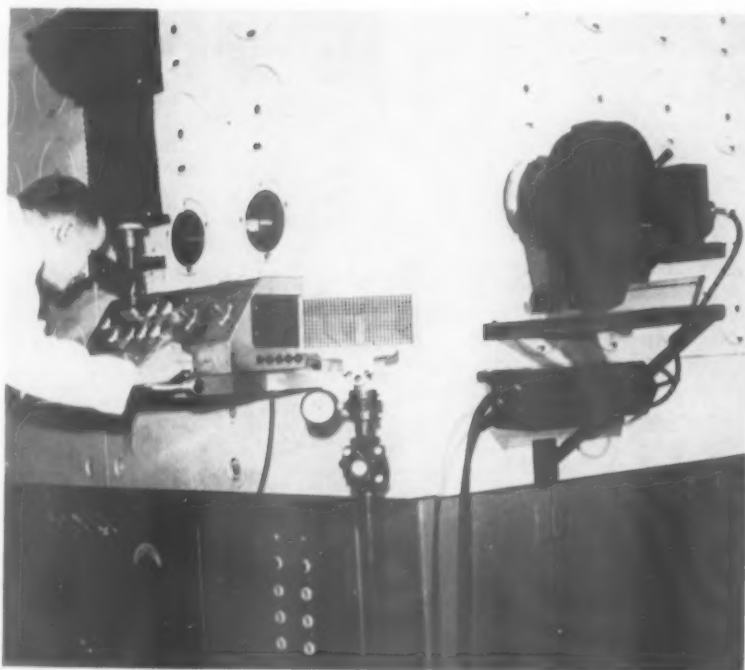
Such a "hand" removes the

sample from a lead container and positions it against grinding and polishing wheels. Then, electrical etching equipment removes the top layer of metal which has been made into a "non-typical microstructure" by the heat of the grinding.

Mechanical "fingers" place the radioactive sample on the microscope stage, and the scientist manipulates sensitive controls to bring into focus one of three compound objective lenses.

Light beamed through a wall port is focused to a bright pin point, illuminating the polished sample of metal inside the cell. Reflected light from a circular dot of metal, sometimes as small as five one-thousandths of an inch in diameter, is collected by a compound lens and projected through another wall opening to an external eyepiece. There, it is transformed into a vastly enlarged image of the circular area.

The instrument can optically separate two elements of grain structure one one-thousandth of an inch apart.



**METALLURGIST** focuses microscope remotely to study changes occurring in the microstructure of metals exposed to nuclear bombardment.





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# Mechanical Cleaning for Hazardous Locations

**"Explosion-proof" equipment for floor maintenance can be used in industries that used to depend on mop and pail**

**W**HEREVER there is a possibility of flammable vapors, gases or dusts forming an explosive mixture with air all possible precautions are taken to avoid sparks. Electrical equipment is one of the potential sources of ignition and a wide variety of apparatus has been designed for hazardous locations.

Hazardous locations are classified by the National Electrical Code (NEC 70) according to varying degrees of hazard.

## Gases and Vapors

### CLASS I

**Group A**—Atmospheres containing acetylene.

**Group B**—Atmospheres containing hydrogen or gases or vapors of equivalent hazard, such as manufactured gas.

**Group C**—Atmospheres containing ethyl-ether vapors, ethylene or cyclopropane.

**Group D**—Atmospheres containing gasoline, hexane, naphtha, benzene, butane, propane, alcohols, acetone, benzol, lacquer solvent vapors, natural gas.

Group D comprises the more common industrial exposures.

## Dusts

### CLASS II

**Group E**—Atmospheres containing dust of aluminum, magnesium or their commercial alloys.

**Group F**—Atmospheres containing carbon black, coal or coke dust.

**Group G**—Atmospheres containing flour, starch, or grain dusts.

Because of the size and scope of the food processing industries and

the enormous quantities of materials handled, some of the most disastrous explosions have been in Group G.

Any device with an electric motor, however small or apparently harmless, is regarded as a potential source of ignition. So equipment for these locations must be of the "explosion-proof" type. Among these are clocks, water coolers, telephones, vacuum cleaners and floor machines.

Explosion-proof types of devices listed for Class I locations are not necessarily acceptable for Class II locations. They may not be dust-tight or they may not operate at a safe temperature when blanketed with dust.

The most widely used guide in the selection of such equipment is Underwriters' Laboratories' *Hazardous Location Equipment List*. All equipment listed has passed exacting tests and is approved for specified exposures.

In the selection and use of all equipment for hazardous locations, the final approval must rest with inspection authorities having jurisdiction. These should be consulted before the equipment is purchased.

For Group I, Class D, and Group II, Class G, quite a wide selection of equipment is available. Fewer devices are approved for Group I, Class C, and Group II, Class F. None are listed by Underwriters' Laboratories for the other groups.

## Cleaning Machines

Formerly such industries as chemical and paint plants, refineries and distilleries were restricted in many of their opera-

tions to hand-cleaning methods. Machines now available can be used in a wide variety of hazardous locations.

Cleaning machines listed have provision for connection of 3-conductor flexible Type S cord with grounding conductor. Replacements should be made with parts supplied by the manufacturer. With some machines the attachments which may be used are specified.

The listings include special suction attachments which facilitate cleaning operations, such as crevice tools, brushes, etc.

Some vacuum cleaners are designed to pick up water in connection with floor scrubbing. These are indicated in the listing.

Portable devices require extra safe construction. Even with the best available heavy-duty, flexible rubber cord, construction is less safe than with devices connected to supply lines using threaded rigid conduit.

Connections to supply lines require use of receptacles with plugs, or receptacles with plugs interlocked with snap switches, or their equivalent, of a type listed for the specified hazardous location. The connecting cord should be inspected frequently and replaced when necessary.

Protection against explosions requires that all electrical equipment exposed to hazardous atmospheres be of a type suitable and safe for installation in such locations.

Continued safety of any equipment, fixed or portable, will depend upon careful, systematic maintenance.



# Air Casualties

*It's bad air that does it. But you can step up production by putting a Coppus Blower on the job to keep the air moving — and keep the men cool.*

The kind of air a man works in has a lot to do with how much work he can turn out.

In confined places like shipholds or tanks or drums or boilers . . . or wherever the air is stagnant or hot or full of fumes . . . a Coppus Blower is a *must* for getting first-class work out of the men, all the time.

A Coppus Blower or Exhauster helps avoid sickness and lassitude due to bad air . . . and improves morale, too.

Portable and adaptable for special purposes, Coppus Blowers and Exhausters will have dozens of uses around your plant. The "Blue Ribbon" (a blue painted band) is your assurance of quality performance at lowest cost.



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- ☐ motors, generators, switchboards.
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- ☐ exhausting welding fumes.
- ☐ stirring up stagnant air wherever men are working or material is drying.
- ☐ drying of walls, sheets, etc., after treated with coating material.

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(Write here any special ventilating problems you may have.)

# SMALL BUSINESS and ASSOCIATIONS



By A. M. Baltzer

Small Business Program Staff, National Safety Council

## More Proof that Safety Pays

At the New York State Safety Conference last fall Charles Rust, assistant manager, Aetna Casualty and Surety Company, reported a very interesting study made of 13 large and small "poor risks."

Ten of the 13 employers agreed to cooperate and accepted the carrier's offer to give them special engineering service. Recent inquiries show that the 10 cooperating plants received an average injury frequency rate reduction of 25 per cent.

In the case of some of the larger firms, insurance premium savings ranged as high as 16 per cent, but even the smallest companies benefited by more efficient production brought about by improved guarding, more general use of safety equipment and employee training.

The three firms which did not cooperate suffered! Plant A, with 25 employees, continued to have poor experience and, in spite of premium increases, finally had to be cancelled. Plant B, with 100 employees, reported increased injury frequency rates and 15 per cent higher insurance premiums. Plant C, also with 100 employees, cut back its operations to only 11 employees and no valid comparison could be made (could accident costs have been a factor in the cut-back?).

This is not the first such story that we have printed but it is a reminder that "safety pays" and that "accidents cost."

## Small Business Turns Out

The Hammond (Indiana) Safety Council, supported by the National Safety Council, Hammond Insurance Association and Hammond Jaycees, sponsored a half-day safety workshop January 31 at the Purdue University Hammond Campus, which established

a record! All except two of the 30 management and labor representatives present came from firms with fewer than 100 employees!

Credit for this successful workshop goes to Dr. Hedwig S. Kuhn, nationally-known ophthalmologist; W. P. Wilke III of Hammond Lead Company, and to members of the Hammond Jaycees who personally telephoned owners or managers of 55 small plants on the Chamber of Commerce's mailing list. The personal invitations, plus excellent publicity, turned the trick.

The three-hour program combined the promotional and technical subjects known to be of interest to this particular group. The speakers used visual aids, conducted an active question and answer period and aimed at small manufacturers, contractors and service groups that had little or no previous contact with organized safety. Mimeographed transcripts of the entire session are being edited and forwarded to those present and to all the small firms in the Hammond area who were interested in this program.



**THE HAMMOND** Safety Council Workshop for small firms featured a talk on "Basic Safety Principles" by Russell Pisle, director, Industrial Relations, Republic Steel Company, Chicago.

The Hammond group is to be congratulated for their intensive effort and for their plans to repeat and expand on this successful workshop.

## Proof Positive

We are proud of the statistics, cold as they may be, which prove that accident prevention is not just so much "stuff and nonsense." But it gives us a particular thrill to get one of those rare personal testimonials that remove all doubt that our safety message is getting across.

S. I. Hartwell, safety director for Taylor Instrument Companies, recently conducted a six-week safety training course for supervisors in the Lockport, N. Y., area. He reports that practically all of the class came from smaller companies.

He received many compliments, including one from a veteran maintenance foreman who said: "All my life I have been working on electrical hookups while they were hot, but I now realize that I have just been lucky. Today I issued the order that "hot work" is forbidden. I am just beginning to realize the chance I was taking and the bad example I was setting for my men."

We are also glad that this old-timer took the trouble to voice his convictions and we hope many other supervisors, who have been exposed to our story, feel and act the same way.

## Labor-Management Conference

The Washington State Labor-Management Safety Conference for the Pulp and Paper Industry included an exhibit furnished by our Seattle-King County Chapter. L. R. Wheeler, chairman of exhibits, later reported that the "excellent display and generous door prize added much to the conference."

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best industry circles...*

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The glistening golden brown upper leather is No. 1 grade "Catalina"—a special tannage by Pfister and Vogel of Milwaukee. A hidden gore assures both instep comfort and ankle hugging fit.

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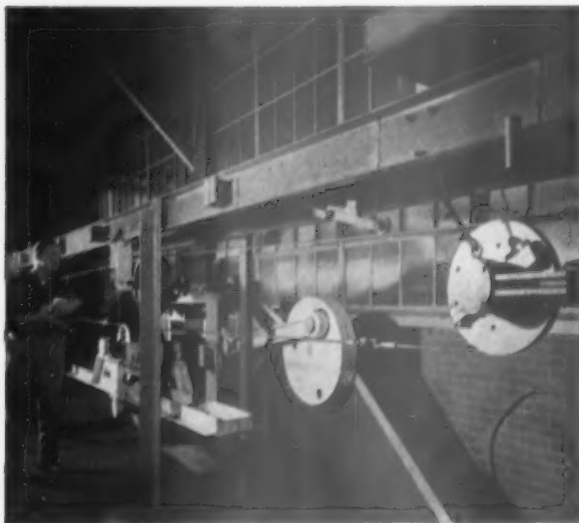


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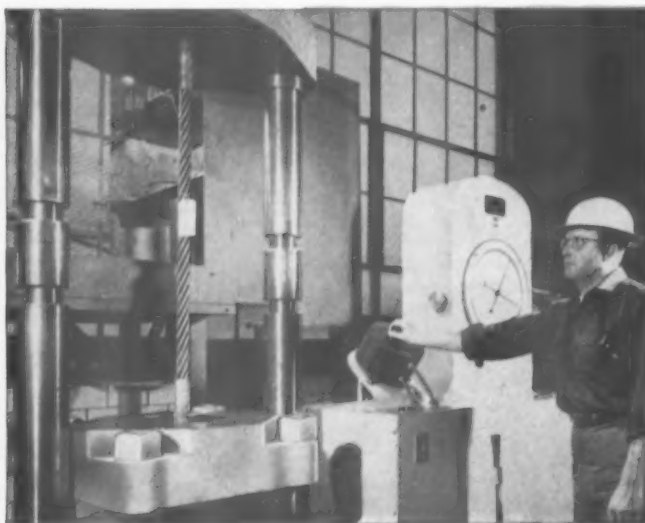
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# Why J&L wire rope safety with



**Fatigue machine.** This 6 x 25 I.P.S. fiber core rope is being subjected to a continuous fatigue test to determine the number of reversed bends before breakage.



**Cross-section tension test.** This 1 1/4" 6 x 41 I.P.S.-RL fiber core rope was tested to 140,000 lbs. tensile load. Catalog requirement for same rope is only 123,000.



**Vibration fatigue test** subjects this boom pendant assembly to repeated shock loading. The 2,500 ft. lb. load provides action simulating actual field conditions.



**Tension test of individual wires** shows pounds of tensile load withstood before breaking. Every coil of wire used in J&L wire rope is thoroughly tested before acceptance.



# salesmen can talk confidence

To users and buyers of wire rope, safety and long rope life are all-important considerations. When you specify J&L, you can be confident you are buying wire rope that will stand up to the job for which it is made.

Every strand of J&L wire, every finished wire rope, is subjected to exacting tests to determine maximum factors of strength, flexibility, abrasion and corrosion resistance.

This quality control is a most important operation in the production of J&L wire rope. Shown here are some of the tests that enable your J&L wire rope salesman to talk about quality with confidence.

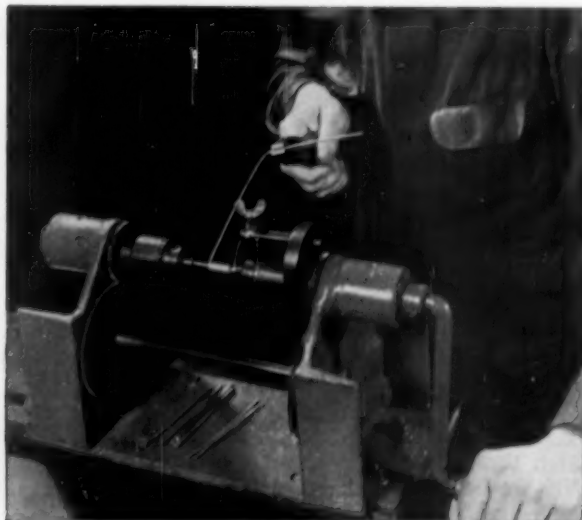
The next time you buy wire rope, call your nearby J&L representative, or write direct to the Jones & Laughlin Steel Corporation, Wire Rope Division, Muncy, Pennsylvania.



**Jones & Laughlin**  
... a great name in steel



Torsion machine tests ductility by twisting wire. This 8" length of .081 wire took 41 revolutions before snapping. Federal standards require only 26 revolutions.



Wrap test. Galvanized wire is wound eight times around a mandrel of its own diameter and then unwrapped, proving ductility of wire and the bond of the coating.

(Protective screens removed during photography.)

# AROUND THE COMPASS



## ACTIVITIES • PROGRAMS • EVENTS

By George W. Harris

Field Service Department, NSC

### Legislation In The Hopper

There is every indication that by the time the 44 state legislatures which meet in regular session during 1957 have adjourned, they will have given record attention to highways and traffic safety. Recommendations for increased highway funds, intensified traffic safety measures, and more uniformity of motor vehicle laws have been emphasized in most governors' messages to them. Eight governors indicated they will send special safety messages to the lawmakers later.

Legislation facilitating stepped-up enforcement has been introduced in almost every legislature that is sitting.

The Federal Congress also is considering several bills. For example, Rep. Kenneth A. Roberts (D., Ala.) has introduced a resolution which would authorize the Committee on Interstate and Foreign Commerce to continue the study it began last year.

A House resolution would create a committee of five representatives to conduct a full investigation into traffic safety, while a Senate Joint Resolution proposes a "National Commission on Highway Safety" of 21 members appointed by the President.

### Western Congress Features "Swap Shops"

A series of "Swap Shops" for foremen and line supervisors was featured at the Western Safety Congress, held at Los Angeles March 18-20.

The sessions were tailored to fit the needs of first line supervision, and were planned by foremen and supervisors of foremen, according to Carl L. Parham, chairman. The series was designed to help foremen exercise their front-line safety responsibilities.

Four sessions were held each morning and afternoon. Topics remained the same but panelists were changed daily.

The Greater Los Angeles Safety Council played host to the Conference.

### Wisconsin Council Plans Traffic Safety Expansion

The Wisconsin Council of Safety, which in the past has concentrated on occupational safety and health, is preparing to expand its activities to function as a state-wide public support group for traffic safety.

The plans are a result of recommendations stemming from the Regional Conference of the Pres-

ident's Committee for Traffic Safety, held last May in Chicago.

R. W. Gillette, executive secretary-treasurer, is preparing the necessary organizational and constitutional changes for submission to the membership at the annual meeting, to be held in June.

At a meeting held March 1, at Madison, an Advisory Committee to the Safety Division of the Motor Vehicle Department, appointed after the Regional Conference, approved a subcommittee's recommendation that such a traffic support group be established in Wisconsin. The Advisory Committee further approved the Wisconsin Council of Safety's expanding to fill the need.

The subcommittee which made the recommendation acted under the chairmanship of Robert M. Sorensen, secretary-manager, Racine County Safety Council.

The Sorensen subcommittee also recommended that Governor Vernon W. Thompson be requested to establish a coordinating committee of officials concerned with highway traffic.

Both recommendations are in line with the Action Program of the President's Committee for Traffic Safety and the Report of the Governor's Conference Committee on Highway Safety.

### Other States Active, Too

Two other states have been rolling up their sleeves to attack the traffic problem. Governor James E. Folsom, in inviting delegates to the Fourth Annual Alabama Safety Conference, stated, "Alabama urgently needs concentrated attention to our traffic problems." He pointed out the need for a greatly increased citizen support group to pool the efforts of citizens with those of official agencies.

(—To page 52)



**THE TWIN CITIES** Area Safety Council sends us this picture of a mannequin which was used to show the location of parts of the body involved in 35 lost-time injuries suffered by St. Joseph (Mich.) Division employees of the Whirlpool-Seeger Corp. during 1956. Lost-time cases were reduced to 35 last year, compared to 57 in 1955.



# The problem of POISON PLANT DERMATITIS is no problem when you use WIP MEDICATED OINTMENT

## SAFETY ENGINEER WITH 4000 PEOPLE SAYS:

"After two years of experiments and subsequent daily use by approximately 4000 people, we have completely revised our preventive and curative procedures using WIP (B-Y's) Medicated Ointment as the only external application. We have discontinued use of a dozen items, previously used, which were ineffective and non-acceptable to our people. We have not experienced a disability assignment or lost time accident due to poison oak in the past two years."

## SAFETY ENGINEER WITH 1100 PEOPLE SAYS:

"In reviewing the accident record for the past year, we have not had a single case of poison ivy, poison oak or affiliated ailments since we started using your Medicated Ointment. After having run an experiment, we standardized the packet type Medicated Ointment and now require that it be in each First Aid Kit."



## No more loss of man hours—use WIP MEDICATED OINTMENT

*for the prevention, relief and treatment of*

### POISON OAK • POISON IVY • POISON SUMAC

With WIP Medicated Ointment you take the guesswork out of the hazards of poison plant infection. Large companies all over America with field crews, which are exposed to vegetation, are selecting WIP for their safety kits. Contains no harsh drugs; so mild it can even be used around the eyes. Absorbs into the skin leaving it soft and clean; no mess, no stain. Available in easy-to-use polyethylene tubes in  $\frac{3}{8}$  oz.,  $1\frac{1}{2}$  oz. and 3 oz. Your men will enjoy using this protection... and your safety record will become more impressive.

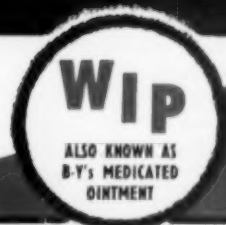
**WESTERN INDUSTRIAL PHARMACEUTICALS CO.**  
A DIVISION OF B-Y's, INC.

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**Safety Engineers:**  
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**ON REQUEST**

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Pharmaceuticals Co.,  
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Northern States Power Co., St. Paul  
Northwestern Bell Telephone Co., Minneapolis  
Iowa Electric Light & Power Co., Cedar Rapids  
Oklahoma Gas & Electric Co., Oklahoma City  
Missouri Service Co., Tarkie  
Indiana & Michigan Electric Co., Fort Wayne  
Michigan State Highway, Grand Rapids  
Northwestern Bell Telephone Co., Omaha  
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Commonwealth of Pennsylvania Dept. of Forests & Waters, Harrisburg  
Georgia State Highway Division, Macon  
California State Division of Highways, Sacramento  
North Carolina Forestry Camp for Farm Boys, Raleigh  
Davey Tree Surgery, San Francisco & Los Angeles  
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**E. D. BULLARD CO. DAVIS EMERGENCY EQUIPMENT CO., INC.**  
**MINE SAFETY APPLIANCES CO.**

# Our Vulnerable Backs

By FREDERICK P. KIEFER

**The spine can be injured by lifting a casting or picking up a dime. Even an office worker needs instruction in lifting**

**B**ACK INJURIES at Sperry came in for more than their usual share of attention when we discovered that heavy lifting was a relatively infrequent cause—in fact our administrative and clerical workers were suffering many more back injuries proportionately than other groups.

At least a partial solution came out of our coordinated medical-safety approach, coupled with a general educational program covering the more common back injuries and their causes. Usually the safety engineer and the doctor see only the most serious injuries, and a large number of the milder cases of aches and pains are seen only by the nurse. It is here that a good educational program can be strongly implemented.

First, let's consider the causes and cures of the three commonly reported back injuries. A review of the anatomical considerations will help in evaluating the educational approach needed.

**Simple Low Back Strain.** Perhaps the most common complaint is the "ache in my back" variety. It can be caused by any number of traumatic incidents from lifting a casting to picking up your car keys. Many times just sitting in a strained position is enough.

Our experience reveals the fact that our administrative and clerical workers have proportionately many more back injuries than other groups. This fact makes sense when you realize that the man doing a job involving physical

labor, operates usually in a rhythmic way which keeps his body supple. A desk worker, however, may sit in one rigid position for hours which involves a certain rigidity of the neck and low back muscles. A good experiment would be to try typing while sitting forward in a straight-backed chair.

When you examine the adult spine you can see the precision with which each vertebrae articulates with its neighbors, forming five distinct curves. The vertebrae are maintained in this "proper" position by ligaments and cartilage, important among which are the discs and the longitudinal ligaments, anterior and posterior. The bone structure itself is divided into five distinct groups: cervical (7), thoracic (12), lumbar (5), sacral (5), coccygeal (4 to 7).

If abnormal curvature develops (from chronic bad posture, flat feet, or vertebral anomalies) the connecting tissue is overstressed and undue pressure is imposed on the nerves. Except for congenital defects and structural injuries, the problem is one of maintaining good posture. Such a task implies the conscious development of good posture through muscular control and proper exercise.

**Herniated Disc.** The disc itself acts much in the nature of a shock absorber. True, the exterior fibrocartilage binds together the bodies of the vertebrae, but the resilient nucleus pulposus acts in its turn to reduce shock. There are, however, two weak points in this connecting structure, the annulus fibrosis, which are located at the front of the root of the arch of the vertebra. Usually trauma is in-

volved, marked by herniation of the annulus fibrosis on either side of the posterior longitudinal ligament. The resultant bulge causes pressure against the sensory root nerves, resulting in all the usual effects—pain radiating down the leg, etc.

If you consider from a mechanical point of view the forces that lifting with a bent back from one side to the other, or lifting and twisting the torso at the same time produce, you can see easily that this unequal pressure up through the spinal column produces a squeezing effect on the compressed side. The cure here is avoidance of awkward positions while lifting.

**Sacroiliac Strain.** The third common back injury syndrome involves the sacroiliac joint and the sacral plexus lying just in front of it. This joint is in reality a fixed joint, not designed for movement except in the female at childbirth. Any slight motion in this joint results in an irritation of the nerve fibers penetrating the joint and then the sacral plexus.

A muscular spasm is produced which, in tightening up all the muscles, tends to further aggravate the existing spasm. The irritation is part of a self-continuing cycle which can effectively slow the healing process and produce months of pain.

The motion commonly associated with this trauma is a lift while off balance or a combined twist and bend. This problem has its root in the proper technique of lifting.

We can summarize by saying that of the three types of injury, two are controlled by providing

—To page 120

FREDERICK P. KIEFER is Safety Engineer, Sperry Gyroscope Company, Division Sperry Rand Corporation, Lake Success, N. Y. This article is adapted from an address at the 26th Annual Safety Convention, Greater New York Safety Council, April 19, 1956.



# Thom McAn's amazing new Ripple Sole absorbs shock

that tires feet—prevents injury from slips or skids



**S-4386**—Casual style desert saddle oxford. Deep, rich shade of aniline tanned leather piped in black. Leather-lined steel toe box. Ripple sole resists oil and water. Sizes: C 7-12, D 6-14, E 6-12.



**T**HE NEW RIPPLE SOLE brings a daring new concept to walking comfort and safety. It has been called by many the greatest shoe improvement in 2,000 years. Here are some of the reasons why we know this to be a fact:

- Nonskid traction prevents injury from slips or skids.
- New "Gliding Action" lengthens stride to save muscular effort—gives bounce to your step.
- Absorbs pavement shock (the cause of most fatigue in walking).
- Helps circulation in legs and feet—especially when standing still.
- Steel toe protects against falling objects.

This is another good example of the things Thom McAn does to give your men greater *safety* on the job, and *style* after work.

**NOW SOLD THREE WAYS:** **1.** Directly from Thom McAn warehouses for plant inventory, or on mail-order basis. **2.** Through Thom McAn's special In-Plant Fitting Plan. **3.** At Thom McAn Shoe Stores. Send today for details on Thom McAn's special money-saving plans—plus a full description of the new Thom McAn Safety Shoe line.

Write: Thom McAn Safety Division, 25 West 43rd Street, New York 36, N. Y.

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# Thom McAn

## SAFETY SHOES

A Division of Melville Shoe Corporation

for

# DISTINGUISHED SERVICE



## Winners of National Safety Council Awards for outstanding records

**T**HREE TYPES of awards are given by the National Safety Council to industrial units in recognition of outstanding performance in accident prevention:

1. **THE AWARD OF HONOR** is available to units whose records, though not perfect, meet rigorous standards of excellence. These standards take into account the previous experience of the unit as well as the experience of the industry in which it operates. A unit must qualify on both frequency rate and severity rate. The Award of Honor is available also to units which complete 3,000,000 man-hours without a disabling injury.

2. **THE AWARD OF MERIT** has similar, but less exacting requirements. Minimum number of injury-free man-hours needed to qualify is 1,000,000.

3. **THE CERTIFICATE OF COMMENDATION** is available only for injury-free records covering a period of one or more full calendar years and totaling 200,000 to 1,000,000 man-hours.

Details of eligibility requirements may be obtained by writing to the Statistics Division, National Safety Council.

### AWARDS OF HONOR

**Algoma Plywood Veneer Co.**, Entire Company, Algoma, Wis.  
**Aluminum Co. of America**, Two Awards: East St. Louis (Ill.) Works; New Kensington (Pa.) Works  
**American Enka Corp.**, Enka (N. C.) Plant.  
**Avco Mfg. Corp.**, Lycoming Div., Stratford, Conn.  
**Celotex Corp.**, Marrero (La.) Plant.  
**Chemstrand Corp.**, Hylon Plant, Pensacola, Fla.  
**Douglas Aircraft Co., Inc.**, Santa Monica (Calif.) Plant.  
**Ford Motor Co.**, Three Awards: Trim Plant, Highland Park, Mich.; Memphis (Tenn.) Assembly Plant; Aircraft Engine Div., Chicago.  
**General Electric Co.**, Two Awards: Meter Dept., Somersworth, N. H.; Hanford Atomic Products Operation, Richland, Wash.  
**Grosse & Blackwell Co.**, Entire Company, Baltimore, Md.  
**Harper-Wyman Co.**, Chicago.  
**International Harvester Co.**, Farm Implement Div., Waukesha, Wis.  
**Material Service Corp.**, Lockport Sand & Gravel, Lockport, Ill.  
**Mead Corp.**, Georgia Kraft Co., Macon, Ga.

**Mine Safety Appliances Co.**, Entire Company, Pittsburgh, Pa.  
**North American Aviation, Inc.**, Two Awards: Rocketdyne Div., Canoga Park, Los Angeles; Columbus (Ohio) Div.  
**S. G. Taylor Chain Co., Inc.**, Hammond, Ind.  
**Union Carbide Nuclear Co.**, Oak Ridge (Tenn.) Gaseous Diffusion Plant.  
**Weyerhaeuser Timber Co.**, Sales Co., St. Paul, Minn.  
**Western Electric Co., Inc.**, Allentown (Pa.) Works.

### AWARDS OF MERIT

**Allegheny Ludlum Steel Corp.**, Brackenridge (Pa.) Works.  
**Allis-Chalmers Mfg. Co.**, Gadsden (Ala.) Works.  
**Aluminum Co. of America**, Two Awards: Edgewater (N. J.) Works; Smelting Div., Massena (N. Y.) Works.  
**American Bridge Div.**, USSC, Fabricating Plant, Ambridge, Pa.  
**American Can Co.**, Maywood (Ill.) Sanitary Plant, 73-A.  
**American Cyanamid Co.**, Warners Plant, Linden, N. J.  
**American Oil Co.**, Texas City (Tex.) Refinery.  
**American Synthetic Rubber Corp.**,

Entire Company, Louisville, Ky.  
**Amerotron Corp.**, Five Awards: Robbins (N. C.) Plant; Red Springs (N. C.) Plant; Honea Path (S. C.) Plant; Hartwell (Ga.) Plant; Louise Plant, Charlotte, N. C.  
**The B. F. Goodrich Co.**, Akron (Ohio) Plant.  
**Canadair, Ltd.**, Entire Company, Montreal, Quebec, Canada.  
**Chrysler Corp.**, Two Awards: Highland Park (Mich.) Plant; Outer Drive Plant, Stamping Div., Detroit.  
**The Cincinnati Gas & Electric Co.**, Entire Company, Cincinnati.  
**Curtiss-Wright Corp.**, Propeller Div., Caldwell, N. J.  
**Dan River Mills, Inc.**, Two Awards: Div. No. 1, Danville, Va.; Div. No. 2, Danville, Va.  
**Ford Motor Co.**, Four Awards: Norfolk (Va.) Assembly Plant; Kansas City (Mo.) Assembly Plant; Blast Furnaces, Steel Div., Dearborn, Mich.; Cleveland (Ohio) Engine Plant No. 2.  
**General Electric Co.**, Two Awards: Direct Current Motor & Generator Dept., Erie, Pa.; Flight Propulsion Laboratory Dept., Cincinnati, Ohio.  
**Goodyear Atomic Corp.**, AEC Plant Site, Piketon, Ohio.  
**Hughes Tool Co.**, Culver City (Calif.) Plant.  
**Kansas Gas & Electric Co.**, Entire Company, Wichita, Kan.  
**Mead Corp.**, Georgia Kraft Co., Macon, Ga.  
**National Lead Co. of Ohio**, Food Materials Production Center, Fernald, Ohio.  
**Pacific Power & Light Co.**, Entire Company, Portland, Ore.  
**Pomeroy-Hawaiian Dredging-Bechtel, F. P. O.**, San Francisco, Calif.  
**Ruberoid Co.**, The South Bound Brook (N. J.) Plant.  
**Sharon Steel Corp.**, Fairmont Coke Works, Fairmont, W. Va.  
**Simpson Paper Co.**, Entire Company, Everett, Wash.  
**Solar Aircraft Co.**, San Diego (Calif.) Plant.  
**Sunflower Ordnance Works**, Lawrence, Kan.  
**Sylvania Electric Prods. Inc.**, Wal-doboro (Me.) Plant.  
**Teletype Corp.**, Entire Company, Chicago.  
**United States Rubber Co.**, Haug-tuck Chemical Div., Joliet, Ill.  
**Washington Gas Light Co.**, Entire Company, Washington, D. C.  
**Western Electric Co., Inc.**, Cleveland Area of Telephone Sales Div.-Inst.  
**Westinghouse Electric Corp.**, Lamp Div., Little Rock, Ark.  
**West Virginia Pulp & Paper Co.**, Kraft Div., Charleston, S. C.



**ACCO**  
for Better  
Values

**1 Accoloy X-weld 125 Chain**  
Pat. No. 2763768

**2 New Shaped Master Link**

**3 ACCO Registration Ring**

**4 Registration Certificate**

## You get all these "plus values" in Acco Registered Sling Chains

• When you equip your plant with ACCO Registered Sling Chains, you are getting slings of such *proved safety and efficiency* that they are the standard by which all other slings are judged! And, in addition, you get all these important, exclusive "plus values":

**1 Accoloy X-weld 125 Chain** • Where extra strength is desired in an ACCO Registered Sling Chain, the patented new Accoloy X-weld 125 Chain is used. Its king-sized welded area and non-kinking feature assure greater ruggedness and better service at no increase in price.

**2 New Shaped Master Link** • ACCO engineers have created the new Shaped Master Link which, without any increase in weight, holds its form under loads up to 18% greater than a standard round section can. This means extra security for your loads.

**3 ACCO Registration Ring** • The presence of this serially-numbered ring on an ACCO Registered Sling Chain shows that each component has been tested before assembly . . . that the assembled sling has been proof-tested to twice its working load limit . . . and that all tests have been successfully

passed before registration of the complete sling and shipment from the factory.

**4 ACCO Registration Certificate** • Every buyer of an ACCO Registered Sling Chain is furnished with a Registration Certificate signed by American Chain & Cable Company, Inc. This Certificate gives assurance that the sling meets ACCO's severe requirements of quality and proof-tested performance, and that it has been individually registered on ACCO's permanent records.

### Tops in safety and strength

ACCO Registered Slings, with Magnaflux-tested hooks, give the best in strength, safety, service—and long-range economy. They are available through ACCO Registered Sling Chain Distributors in principal industrial centers. For full data, write us at York, Pa.

### WHAT "ACCO REGISTERED" MEANS

- 1 The best material
- 2 Unit safety factor (on bodies, rings, links, hooks)
- 3 Proof test of complete sling to twice the working load limit
- 4 Actual field service test of each design
- 5 Metal identification ring on each sling
- 6 Signed Registry Certificate with each sling

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**AMERICAN CHAIN & CABLE**  
Bridgeport, Conn. • Factories: \*York and \*Braddock, Pa.

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\*Houston, \*Los Angeles, \*New York, Philadelphia, Pittsburgh,  
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# CONSULTATION CORNER

By George MacDonald, Industrial Department, NSC

Got a problem in accident prevention or occupational hygiene? Questions are answered by mail, a few of general interest being selected for publication here

## Poor Place for a Sprinkler Head

**Question.** Is there any danger in locating a sprinkler head directly over a hot salt heat treatment pot?

**Answer.** This is a potential hazard and water or other liquid fire extinguishers should not be used, as they might cause an explosion. You should, however, call in your insurance carrier before making any change in your sprinkler system. It would be well, too, to ask your local or city fire protection engineer for his recommendations.

Without their help you may make changes that would cancel your insurance or violate a local ordinance.

The National Safety Council's Data Sheet D-270 covers some of the problems connected with salt baths for heat treating.

## Propane Cutting Torches

**Question.** What precautions are necessary in using a propane cutting torch?

**Answer.** When liquefied petroleum gas is used with oxygen, National Board of Fire Underwriters standards for the *Installation and Operation of Gas Systems for Cutting and Welding*, No. 51, shall apply.

While heavier than air, propane diffuses well with air and with natural ventilation the gas would be dissipated. This refers, of course, to small amounts of gas that are purposely released into the atmosphere prior to lighting the torch. In confined or storage areas, naturally there is a hazard when the gas is allowed to escape or where leaks develop.

Propane is clean-burning, so there is no danger from that

source with natural ventilation. The hazard, however, depends on the material being cut, since metals coated with zinc or materials containing zinc need local exhaust ventilation when the work is done indoors. (See *Safety in Gas and Electric Welding and Cutting Operations*, Z49.1, American Standards Association.)

## Safe Jack Suggested

**Question.** A change in our plant layout involves lifting heavy machinery from the floor, placing it on rollers, moving it to the new location, removing rollers and then lowering it in proper position. Often, it is necessary to raise the equipment slightly to align it with the base holes, or to level.

Our jacks are heavy to lift and difficult to position, and their large handles jut in the path of

passing employees. We also worry about the rachet not catching and holding.

Do you have any suggestions as to a safe jack that can be used?

**Answer.** Several light-weight hydraulic hand jacks are manufactured. Some can be disassembled so that one man can handle components separately.

Some of these jacks have assemblies that can be attached to get a clamping, pushing, pulling or spreading action.

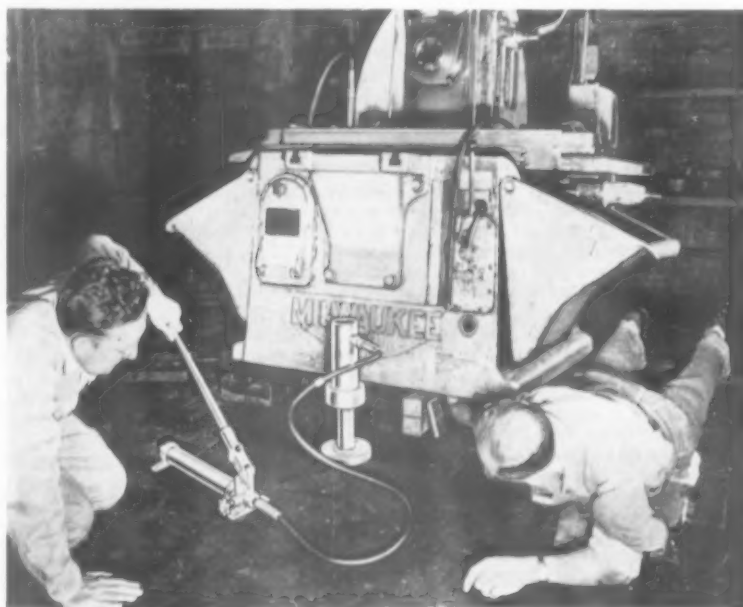
The hydraulic ram can be moved about the equipment to be raised and the attached hose flexed so that the handle and pump are away from load or traffic. One-man operation is possible.

Regardless of the type of jack used, never leave loads suspended on it. Prepare for a lifting job by having blocks, wedges and short ropes ready.

As soon as a lift is made, slip blocks or wedges or a combination of both under a load; then remove the jack or release it enough to allow the load to seat on supports.

Blocks, wedges and shims should be pushed under the load with a stick or pulled under with attached ropes. Safety-toe shoes should be worn, the floor free from grease and oil and disas-

—To page 58





**for greater  
employee safety,  
comfort, and efficiency  
this summer**

Be ready for the hot days ahead . . . order your MScO seasonal protective supplies now, so that your workers will avoid the dangers and discomfort of heat, insects, snakes, and poisonous plant dermatitis.



**SAUNDERS' SNAKE BITE KIT**

Provides *instant* first aid in the field. The Saunders' kit, *exclusive with Medical Supply Company*, has the only venom-suction pump with a guarantee . . . does not have to be lubricated in the field . . . no glass to break. Precision-made for dependable, fast, easy operation. Contains everything needed for emergency use . . . suction pump, adapters, tourniquet, lancet, bandages, antiseptic, inhalants, and instructions.



**MScO POISON IVY FIRST AID**

Protect your workers against poisonous plant dermatitis with these *field-proved* MScO products. No. A-20 Zircreme contains both zirconium\* for its curative properties and the antihistamine pyrilamine maleate for relief of itching. Available *both* in units and 1-pound jars. No. A-17 Poison Ivy Ointment, both a preventive and a cure—in new handy foil packets—six per unit. No. 102A Poison Ivy Wash, a long-time accepted treatment. Six vials with applicators per unit.

\*Latest medically approved treatment—write for clinical data.

**MScO INSECT REPELLENT\***

Pellent, the standard repellent of our Armed Forces, for protection against all insects. No. 205-AA Pellent Cream in 2-ounce plastic squeeze bottle. Won't sweat off . . . all-day protection. No. 204A Pellent Ointment, six 1/4-ounce tubes per unit. No. 320 Liquid Form Pellent in 5-ounce aerosol spray can . . . for use either on body or clothing. Normal spraying gives several hours' protection. Saturate clothing with spray for one week to 10 days' protection. Will not stain.

\*Samples available to Medical Directors and Safety Directors for field tests.



**MScO IMPREGNATED SALT TABLETS**

Controlled action of MScO impregnated salt tablets replaces body salt *immediately*, but at a *gradual* rate to meet the body's needs. In expendable dispensers of 500 (No. 350) or 1000 tablets (No. 300) with transparent window and aluminum mounting bracket (as shown), or in handy plastic vials of 4 tablets for field workers (No. 375—100 vials per carton). Also available in bulk cartons (No. 325—1000 tablets). MScO impregnated salt tablets meet all Federal specifications.

Don't wait for summer discomfort to slow down production . . . order these MScO safeguards now. See your MScO distributor, or write today.



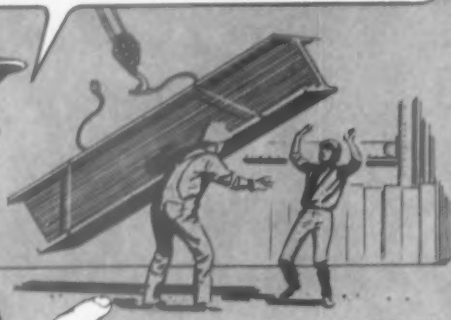
*Specialists  
in first aid*



**Medical Supply Company**  
Rockford, Ill. • In Canada, it's Safety Supply Company

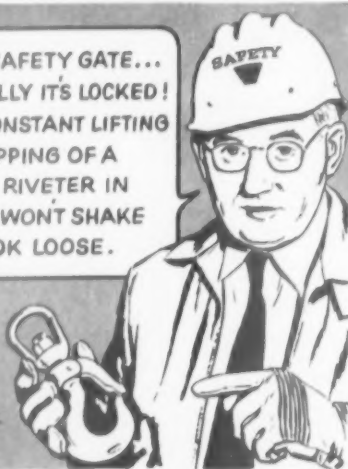
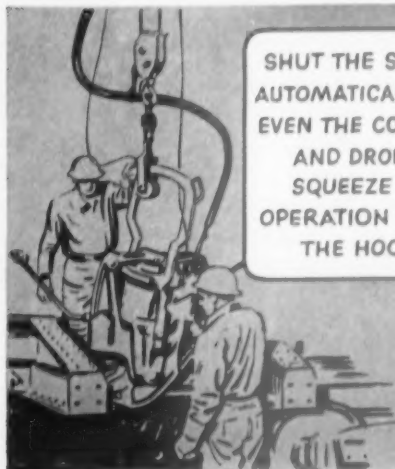
## WE LOCKED OUT THIS LIFTING HAZARD!

OUR MEN AND MATERIALS ARE PROTECTED FROM THIS.  
WE'VE REPLACED ALL OF OUR OLD STYLE HOOKS WITH  
BULLARD SAFETY HOOKS THAT LOCK LOADS IN.



says Safety Engineer, Frank Treadway  
of General American Transportation  
Company, Plant 1, East Chicago, Indiana

SHUT THE SAFETY GATE...  
AUTOMATICALLY IT'S LOCKED!  
EVEN THE CONSTANT LIFTING  
AND DROPPING OF A  
SQUEEZE RIVETER IN  
OPERATION WON'T SHAKE  
THE HOOK LOOSE.



DON'T USE THAT HOOK,  
IT'S SPRUNG!

NO DANGER OF WEAKENED HOOKS  
GOING UNNOTICED, EITHER. THE GATE  
SWINGS FREE, WARNING MEN. IF HOOK  
IS SPRUNG AS LITTLE AS  $\frac{1}{8}$ "



Pushbutton lock

With gate open hook's throat is 100% clear  
Available in sizes 1 to 16A for all type  
hoists, tuggers and come-alongs. Write  
for safety hook data sheet.

E. D. Bullard Co., 2680 Bridgeway,  
Sausalito, California



sembly tools free from oil and  
properly located out of the way.

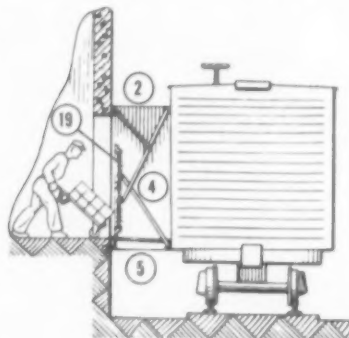
## Dock Tunnel Solves Weather Problem

**Question.** Our plant was recently expanded directly up to the building line. We made arrangements with the railroad to use their side track and cut door openings in one wall for spotting freight.

Because of local ordinances we are unable to build a canopy over the freight cars for weather protection. Sleet and rain falls on employees who are loading and unloading and on windy days the elements blow into the plant.

What can we do to protect our freight handlers from this exposure?

**Answer.** Some companies have constructed a tunnel of plywood



**DOCK COVERING** device provides four-way protection: (2) top, (4) sides, and (5) bottom. Bottom cover and frame is optional. Tension springs (19) automatically place and hold frame and cover in extended position.

or canvas made to fit inside the door size. The door is opened and the unit is pushed through the door opening and against the freight car opening. Some of these units have a solid bottom with the ends extending, acting as dock boards.

Others have constructed the unit with a top and two sides made to be pulled over existing dock boards. Safety glass or plastic panels have been installed at the side to admit natural light.

Another idea is to install a canvas shade on a window roller directly over the entrance. This canvas is pulled over the passageway and hooked to the top of the

car door. This sheds water overhead. When not in use it is rolled up on the roller and held in place by the spring winding device within.

Companies using this device have partitioned off the freight room so that drafts will not sweep throughout the open plant.

Several commercial dock covering devices are available. These can be permanently installed and folded compactly against the building when not in use. Spring holding devices automatically place and hold the cover in an extended position.

### Carbon Tet O.K. For Killing Insects

**Question.** Our meter readers use portable carbon tetrachloride fire extinguishers to kill wasps and hornets in nests on customers' premises. Do you suggest a substitute for carbon tetrachloride?

**Answer.** A check of the literature on insecticides revealed that there are no insecticides recommended for killing wasps or hornets. Apparently there is no intention in the industry to kill them.

We believe that your present method entails the least amount of hazard, provided your employees are aware of the hazards of carbon tetrachloride. While carbon tetrachloride is toxic, its lethal dose is not nearly as small as that of other common insecticides. If a common commercial insecticide were used in the manner that you are presently using carbon tetrachloride, the health hazard to your employees would be far greater, since most of these insecticides in large quantities are seriously dangerous to humans.

In the event you should continue to use a carbon tetrachloride fire extinguisher to combat these bees, it would be well for you to identify this fire extinguisher and use it only for this purpose. You can see the danger of attempting to combat a fire with a fire extinguisher which has no fluid in it.

In addition, whenever using a carbon tetrachloride fire extinguisher to spray overhead, some form of eye and face protection

*no pumping...  
positive control!*

## NEW BUFFALO pressurized V.L. EXTINGUISHER

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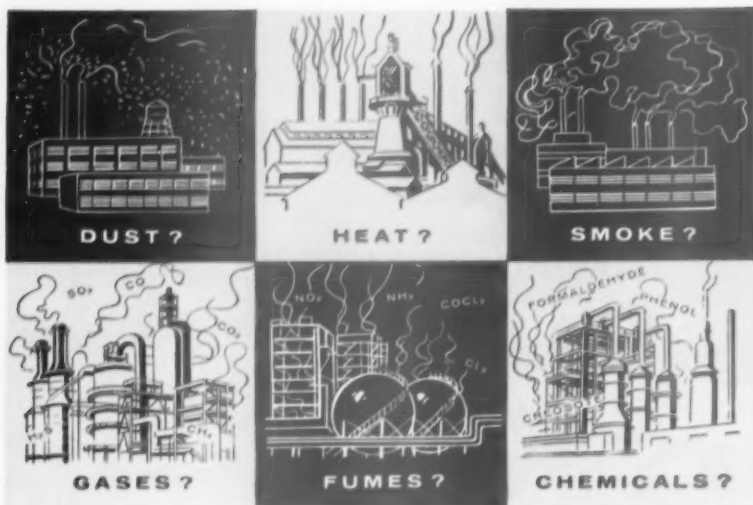
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should be employed. Carbon tetrachloride is dangerous to the eyes, and in fact, should not be permitted to come in contact with the body at any location.

### Fire System Mixes Fuel Oil Additives

**Question.** An article in one of the Council's sectional newsletters outlined the danger of static electric charges building up in pipe lines and storage tanks when handling JP-4 jet fuel. It pointed out that air agitation is a major factor in this static charge build-up.

We handle No. 2 household fuel, diesel fuel, and kerosene, in large quantities. Some of our tanks are 100,000-barrel capacity and up to 120 ft. in diameter. Occasionally we introduce additives into the kerosene, using our air agitation fire-fighting set-up to assure thorough mixing. We have agitated a tank for as long as 4 hours.

Is there any danger in following this procedure?

**Answer.** We discussed the air agitation method with several petroleum members.

With a tank of the size you are using it is possible to accumulate a sizable static charge on the surface of the oil, especially if particles of water are present in the product. Also, as you know, atmospheric conditions and temperature would help determine the amount of static accumulated.

You didn't mention the type of tank you use, but in a floating-roof-type tank you probably would not have any trouble. If the tank is the cone type you are likely to run into difficulties.

Other companies feel that mixing in the lines is safer than mixing in the tanks.

First husband: "My wife has a habit of talking to herself."

Second husband: "So does mine, but she doesn't know it. She thinks I'm listening."

Ulcers often result from mountain climbing over molehills.





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# SAFETY OFF THE JOB

Suggestions for company and community programs

By GRANT O. SHIBLEY

NSC Staff Representative, OTJ Safety Committee

*Editor's Note: This month's column was written by R. P. Hamilton, superintendent safety, St. Louis-San Francisco Railway Company, and chairman of the Off-the-Job Safety Committee of the National Safety Council's Industrial Conference.*

## Why Off-the-Job Safety?

Some of you may be asking yourself that question at this moment and, no doubt, many others all over America are asking the same thing. I will try, briefly, to explain why we should have off-the-job safety activities just as we have on-the-job programs.

Where should we start? I firmly believe that we should start in the schools and the homes, for if we are to have a safer America tomorrow, we must start with the youth of today.

The old proverb, "Train a child in the way he should go, and when he is old, he will not depart from it," applies to safety. Youth must have sound educational programs in the homes and the schools. In the more than 30 million young people in our schools lies a great hope for the solution to the mounting traffic accident problem and the need for safety in all areas of life. Their minds are receptive to new ideas; they are at an age when habits and skills can be successfully established.

Education for safety must be an essential part of the modern school's program for producing good citizens. Accidents are preventable and experience shows that a program of education is one of the more effective methods of achieving safety.

I am proud to say that the railroads are doing their part in promoting safety in the schools. It is not unusual for me to receive a report from a railroad that it has held safety meetings in schools along their line and talked to

more than 100,000 children in a single year. No one can say that the railroads and industries of America are not doing their part to promote off-the-job safety.

Five hundred years before the birth of Christ, Confucius was asked, "Is there one word which may serve as a rule of practice for all of one's life?" He replied, "Is not reciprocity such a word? What you do not want done to yourself, do not do to others."

The principle expressed here is familiar to all of us, and it is the principal aspect of the "Golden Rule."

I am sold on safety and on the railroads and industries of America because, as a rule, they have men in top management who believe in safety and who do something about it. In my work with the Off-the-Job Safety Committee of the Industrial Conference of the National Safety Council I have seen what the leading companies of this country are doing to promote off-the-job safety. Of the 28 sections of the Industrial Conference 16 have off-the-job safety committees, and I am proud that the Railroad Section was one of the first sections to start this worthwhile safety activity.

We have learned that safety is

not for amateurs. It takes professionals, and good ones, to man our safety defenses and plan safety operations adequately. We have learned that any action which hampers, retards, and weakens industry also hampers, retards and weakens our peace, our progress, and our defenses. An employee injured off the job is just as much loss to industry as one injured on the job. And we all know that a person cannot do his best on or off the job if he is worrying about a member of his family who is at home injured or ill.

Safety has become a science—there is more to the job than posting signs and spreading paint. It is a science that deals with men's minds and with mental attitudes. If a person has an attitude of disbelief in himself, his life becomes one of fear, hesitancy, inner conflict, and failure to accept safety as a way of life. A man or woman really believes only as much safety as they are willing to apply to their daily living.

The major challenge confronting safety men today and in the future is not only to keep men alive, but to keep them in good mental and physical health—and the problem will grow greater with the advancement of the years.

Our job is to realize that safety is everybody's job, and try to get everyone to do his or her part. And remember that having the privilege of living under safe conditions in the home, on the job, and in the community requires a constant building program. The minute we relax for one day, for one single minute, trouble begins.

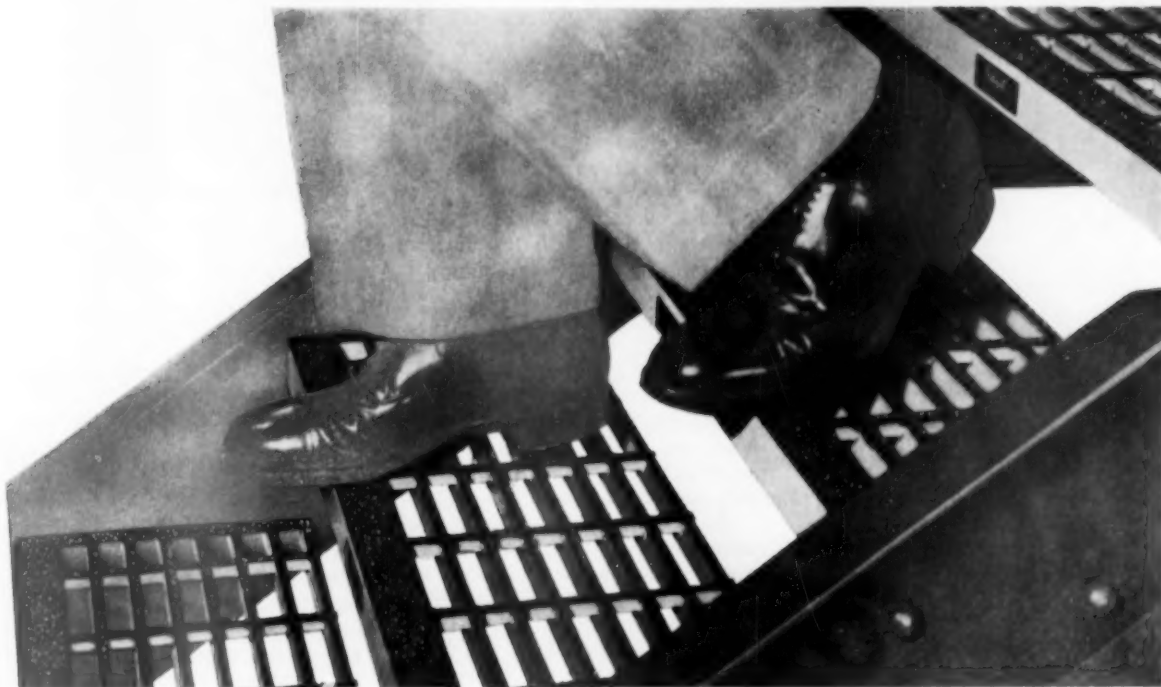
Building a safe state or a safe community is not like building a house—we don't have carpenters and decorators come out and finish the job and hand us the bill. We must continually translate the cause of safety into the field of human values. Safety is a state of mind under which all people, realizing the imminence or consequences of accidents, are willing to accept responsibility entailed in preventing them. There is no easy way to a good safety record—it takes eternal vigilance. Safety is a matter of individual

—To page 106



"There goes an accident about to happen."

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# INDUSTRIAL HEALTH



## Abstracts of current literature

### on Occupational Hygiene, Medicine, and Nursing

By F. A. Van Atta, Director, Research Division, NSC

#### New Developments in Measuring Hearing

"Automatic Audiometry for Industry?" by Raymond Carhart. *American Industrial Hygiene Association Quarterly*, 17:381-387 (Dec. 1956).

THERE CAN BE NO doubt that automation is on the way in audiometry as in other fields so there is only one long-term answer to the question. The short-term answer, however, depends upon whether it is ready to do a job for an industrial hearing program right now and what the job is. The reason for using automatic methods in any field must be that the automatic methods either produce results of higher quality or produce results of quality equal to the manual methods and more economically.

In industrial audiometry it is generally agreed that the thing to be measured is the threshold acuity to pure tones and it is assumed that a series of such measurements can furnish a record of pre-employment hearing acuity, indicate any change in acuity during employment, help find the noise-susceptible person, and in the diagnosis of ear diseases, and supply the basis for legal computation of auditory disability.

For these purposes it has been general practice to use individual audiograms. Screening tests, either individual or group, do not give the desired information. There are some procedures for giving individual audiograms to groups. They have not become popular in industrial work for a variety of reasons but if they do, they can be applied either manually or automatically. Actually, it is probably possible to devise an automatic method for application of any of the audiometric tests now being used but the designers of automatic systems have concentrated on individual administration up to now.

There are two designs which have now produced practical instruments. Von Békésy's procedure presents a continuous tone of changing intensity, the direction of change being controlled by a switch in the hands of the subject who is instructed to press the button when he hears the tone and release it when he does not hear the tone. The machine traces the variations in intensity so produced directly on a standard audiogram form.

This form of instrument suffers from the disadvantage that the acuity for a continuous tone depends rather sensitively upon the immediate past hearing history. Also the acuity for interrupted tones is somewhat greater than for continuous tones.

The Brogan automatic audiometer presents tones of one second duration with a variable interval between presentations. The subject is instructed to press his button when he hears the tone and after each press of the button the tone is presented at 10 db. lower intensity. If he fails to signal the tone is presented 5 db. more intensely. The machine records the intensities of the last three presentations of each tone.

It is not known with certainty that either of these methods yields acuities which are comparable to those obtained by more conventional methods although this question is being studied intensively at the present time.

The present automatic instruments somewhat lessen the manual task for the operator and if there is a sufficient load he can handle more cases per day with automatic equipment. The equipment is also somewhat more expensive than the conventional type so that unless there is enough case load to keep it busy, it will not really get the results any more economically.

The question of the cost of getting results should be carefully studied for each installation in any case, particularly in view of the fact that the machine and time cost of getting audiograms is probably a small fraction of the cost of any industrial hearing program and the further fact that the use of automatic equipment cannot avoid the necessity for having competent and knowledgeable operators and supervision.

#### Office Noise

"Revised Criteria For Noise In Buildings." By Leo L. Beranek. *Noise Control*, 4:1-27 (Jan. 1957).

THIS STUDY is not concerned with determining the effects of noise on the efficiency of office workers but determining the noise level at which the office workers feel that they can accomplish their duties without loss of performance. The fundamental assumption is that if a person believes his work is being affected adversely it probably is.

In this study of 300 office workers each was asked to fill out a questionnaire on which he rated the noise in his firm on a scale from very quiet to intolerably noisy.

At the same time noise measurements were taken close by. The speech interference level, which is the average of the reading in the three octave bands between 600 and 4,800 cycles per second, the loudness level in phons and the average over-all levels were determined for each person who answered the questionnaire.

It is interesting that the subjective ratings correlate better with the loudness level in the office than with the speech interference level. In the few offices the speech interference level and the loudness level both correlated





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plane and household appliance industries. Besides making conventional screws, it pioneered the development and use of stainless steel screws in volume.

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workers see their jobs better. We have further reduced eye strain by using restful colors on walls and colors with high reflectance on ceilings. This has reduced physical fatigue and improved concentration. Safety colors which denote hazard areas have lessened danger of accidents. All this has contributed to better workmanship. Relations between management and workers has been improved. It is highly satisfying that we have been able to get all these advantages at no greater cost than normal maintenance painting."

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Picture of John Wise from AMERICAN HERITAGE

## The old lady gave him what for



AN OLD LADY living near Henderson, N. Y. in 1859 was shocked at the way the four men had arrived—and said so. Such sensible-looking men in such an outlandish vehicle!

But John Wise and his crew, perched up in a tree, were far too happy to listen. Caught by a storm, their aerial balloon had almost plunged beneath the angry waves of Lake Ontario. Then, after bouncing ashore, they had crashed wildly through a mile of tree-tops before stopping in one.

Now, his poise regained, Wise stood up to proclaim: "Thus ends the greatest balloon voyage ever made." He had come 1200 miles from St. Louis in 19 hours, setting a record unbroken for 60 years.

He had also proved his long-held theory of an earth-circling, west-east air current—and that was far more important to him. For Wise was no carnival balloonist. He was a pioneer scientist of the air, a man whose inquiring mind and courageous spirit helped start the vast forward march of American aviation.

In America's ability to produce such men as John Wise lies the secret of her real wealth. For it is a wealth of human ability that makes our country so strong. And it is this same wealth that makes her Savings Bonds so safe.

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well with the subjective rating. In these offices the low frequency noise levels, that is below the speech range, were lower than they were in the offices where loudness level was the better criterion.

In all of the offices where both speech interference level and loudness level correlated well with subjective rating of the noise the difference between the speech interference level and loudness level in phons was about 22 units. If this distance exceeded 30 units there were usually complaints even when the speech interference level was below 40 db.

The noise criterion curves set up here are based on the specification of the loudness level in phons at 22 units greater than the speech interference level in decibels.

The speech interference levels recommended run from 15 to 20 db. for broadcast studios through 25 to 30 db. for apartments, hotels and homes to a maximum of 50 for a coliseum or 45 for a restaurant.

These recommendations are somewhat arbitrary because the attitudes toward noise vary widely in various areas depending upon previous conditioning. In general, however, offices with speech interference levels of 35 to 40 are satisfactory for most purposes and with levels of 20 to 30 would be classed as very quiet offices and suitable for large conferences without the use of voice amplification.

## Cold Feet? Heat the Floor

"The Effects of the Temperatures of the Floor Surface and the Air on Thermal Sensations and the Skin Temperature of the Feet." By F. E. Chrenko. *The British Journal of Industrial Medicine*, 14:13-21 (Jan. 1957).

A CENTURY AGO the commissioners who reported to the General Board of Health on the warming and ventilation of dwellings emphasized that in a comfortable and healthy apartment the floor should be at the highest temperature in the room.

Floor heating since 1857 has been applied to a few buildings, particularly school buildings and

commercial buildings, but it must be applied with care since there are likely to be sensations of uncomfortable warmth in the feet if the floor is too hot. The limiting temperature for the floor has been quoted at a variety of temperatures mostly between 75 and 85 F. In the present experiments the subjective sensation of warmth of the parts of the foot were evaluated and also the skin temperatures of the parts of the foot were measured with thermocouples. The effects of both floor temperature and air temperature on the

sensations and on the actual skin temperatures were measured.

The experiments were carried on with three women and five men as subjects. They wore their normal clothing and shoes. They either sat in comfortable chairs on the heated floor or walked slowly about on the floor for one hour in each experiment. An attempt was made to express both the subjective sensations of comfort or discomfort and the actual temperatures measured in numerical values and to set up an equation to express the probability of



## The idea that solved 1000 "headaches"

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- bar soap wastefully dissolving on the shower room floor?
- liquid soap dispensers either dripping or all clogged up?
- constant work keeping dispensers filled and in order?
- complaints about your soap from both men and women?
- whatever your soap "headache", SBS-60 can help.

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CANADIAN SUBSIDIARY: Chemical By-Products, Ltd., 23 Ruthe Road, Rexdale, Ontario, Canada

comfort and discomfort for various floor surface temperatures.

Since it is commonly found that there is no condition of comfort which satisfies all of the people studied in any investigation of environmental factors it is necessary to specify conditions which best suit the greatest number of people and expect that, in this case, some will feel a little too warm and others a little too cool at the chosen ideal spot.

In the present instance it seems that no such compromise may be necessary since none of the subjects experienced any discomfort with floor temperatures up to 77 F. The probability equations do suggest that there might be discomfort in two or three per cent of observations at this temperature even though none of the subjects expressed any.

It is possible to warm a room quite effectively with floor temperature not exceeding 77 F. The finding is in close accord with earlier observations on schools with heated floors that the floor seems tiring to the feet if its temperature gets as high as 80 F.

It was observed in these experiments that the activity of the subjects was much more important for the sensations produced by various floor temperatures that it was the footwear which they had on. Despite the substantial difference in thickness of shoes and socks between men and women the results can be pooled.

There is a definite relationship between the temperature of the surrounding air and the sensation obtained from a warmed floor. If the air temperature is reduced the tolerance of floor temperature is increased. The results of this experiment indicate that if the air temperature is reduced 10° the tolerable floor temperature will go up from about 77° to about 80° or 86°. Another investigator has observed that with an air temperature of 41 F. in a church and a floor temperature of 102 F., only one per cent of the congregation complained of overheated feet. Extrapolation of the probability equations in this investigation indicates somewhat similar percentage of discomfort.

In order to correlate the sensa-

## 24 Attend Industrial Course At University of Pittsburgh



**DON D. MATEER** (center), supervisor of safety and welfare, Jones & Laughlin Steel Corp., was one of the instructors at the Fundamentals of Industrial Safety course at the University of Pittsburgh. His students (left to right) are: William P. Cook, Duquesne Light Co.; W. H. Tomlinson, U. S. Bureau of Mines; Richard T. Gaither, Dravo Corp., and John D. Andreini, Manufacturers Light & Heat Co.

THE NATIONAL Safety Council's course in Fundamentals of Industrial Safety was presented for the second time at the University of Pittsburgh, January 28 to February 1. Twenty-four students were enrolled, which is the same enrollment as the January 1956 inaugural class.

The course was sponsored by the Western Pennsylvania Safety Council and the Western Pennsylvania Chapter of the American Society of Safety Engineers. Instructors were safety engineers, technical specialists and industrial leaders from the Pittsburgh area, and four members of the faculty

of the Department of Industrial Engineering of the University of Pittsburgh.

Clyde Ruddick, safety director, Pittsburgh Plate Glass Co., was chairman of the joint committee for planning. He also conducted the course. Professor Walter Turkes, head of the Department of Industrial Engineering of the University acted as co-director. Glenn Griffin, director of industrial training of the National Safety Council, taught in the course and assisted in its planning and management.

The classes were conducted in the same manner as they are at

tions with some physiological phenomena an attempt was made to measure differences in the girth of the foot and in the girth of the instep with changes in floor temperature. Nothing very significant was discovered except that

there is a sharp increase in the complaints of discomfort at a skin temperature of the foot which corresponds closely to the temperature at which other investigators have found a sudden large increase in blood flow to the foot.



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429-G

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National Safety Council Headquarters. Most of the instructors used visual aids and developed class discussion. Reference material included the *Accident Prevention Manual*, *Accident Facts*, and several other technical publications of the Council. Extension Sections of the course offered at universities under local sponsorship have been developed under the leadership of the Industrial Conference Committee on Safety Training, of which Earle Hannaford is Chairman.

Representing the University of Pittsburgh on the faculty were:

E. A. DeLeo, Industrial Engineering Dept.

A. G. Holzman, Industrial Engineering Dept.

W. R. Turkes, Assoc. Dean, Industrial Engineering Dept.

H. W. Wolfarth, Industrial Engineering Dept.

Industrial Instructors were:

Scott Douthett, supervisor of safety, Bell Telephone Co. of Pennsylvania.

Joseph Egg, safety director, Duquesne Light Co.

Willard R. Gilliland, assistant safety director, Aluminum Co. of America.

G. O. Griffin, safety director, Dravo Corp.

Glenn F. Griffin, director of training, National Safety Council.

Earl Houck, acting safety engineer, Jones & Laughlin Steel Corp.

Dave Johnson, superintendent of safety, Pennsylvania Manufacturers Association and Casualty Insurance Co.

William Kirzsch, supervisor of safety, Beaver Plant, Westinghouse Electric Corp.

Robert M. Massenburg, safety engineer, United States Steel Corp.

Don D. Mateer, supervisor of safety and welfare, Pittsburgh Works, Jones & Laughlin Steel Corp.

Myron L. Miller, supervisor of safety, East Pittsburgh Works, Westinghouse Electric Corp.

Arthur D. Murphy, director of safety and suggestion plan, Crucible Steel Co. of America.

David B. Perrin, personnel relations manager, Duquesne Light Co.

James Porter, director, industrial inspection, Old Republic Insurance Co.

John J. Redmond, manager of operations, Tar Products Division, Koppers Co.

Clyde C. Ruddick, assistant manager, Safety & Plant Protection, Pittsburgh Plate Glass Co.

Warren Saunders, safety director, Universal-Cyclops Steel Corp.

H. H. Schrenk, director of research, Industrial Hygiene Foundation, Mellon Institute.

John Skendall, safety director, Harbison-Walker Refractories.

Earl E. Stephan, industrial consultant, Western Pennsylvania Safety Council.

## Voice of the Reader

Let's have your views on current topics. You don't have to agree with us

### The Wrong Formula

NEW YORK. Your February issue contains a picture (page 52) of a Newark College of Engineering student lecturing classmates on safety. On the blackboard in the background the formula for computing accident severity rates is shown as:

$SR \text{ (Days Lost)} (10^3)$

Man-Hours

I don't wish to appear critical, but either the photograph is somewhat old or someone should tell the student body that the formula was changed a couple of years back and is now:

$SR \text{ (Days Lost)} (10^6)$

Man-Hours

You must realize that safety men are trained to be observant and you couldn't get away with it.

—J. D. VERHAAREN,

Assistant Safety Director,  
Combustion Engineering, Inc.

Editor's Note: Mr. Verhaaren is right; the method of computing severity rates was changed some time ago. Another way of expressing this formula is:

$\frac{\text{Days charged} \times 1,000,000}{\text{Man-Hours Worked}}$

### Pamphlet Lists Basic Eye Care Essentials

"A BLIND WORKER waits at an intersection. A young man assists him across the street.

"I'm new at this," the blind man says. 'Lost my sight six months ago. Some chemicals exploded in the factory where I worked—right in my face'."

These words are from the introductory paragraphs of a 28-page pamphlet, *Save Your Sight*, published by the Public Affairs Committee in cooperation with the National Society for the Prevention of Blindness. The pamphlet is being offered at 25 cents per copy by the National Society, 1790 Broadway, New York 19.

There are about 300,000 industrial eye accidents every year, the booklet declares. Sixty thousand of these are compensable and 12,000 cause some serious permanent disability. Safety authorities believe that at least 90 per cent of these injuries could be prevented by some form of eye protective equipment.

The pamphlet describes the Wise Owl Club of America, sponsored by the National Society for the Prevention of Blindness. The purpose of the club is to encourage the use of safety eyewear to reduce needless and costly eye injuries. Each member of the club, which includes men and women workers and vocational school students, has saved the sight of at least one eye by wearing eye protection at the time of an on-the-job accident.

The club claims more than 11,000 members in more than 1,625 plants and vocational schools in all 48 states, Canada, Hawaii, Cuba and Puerto Rico.

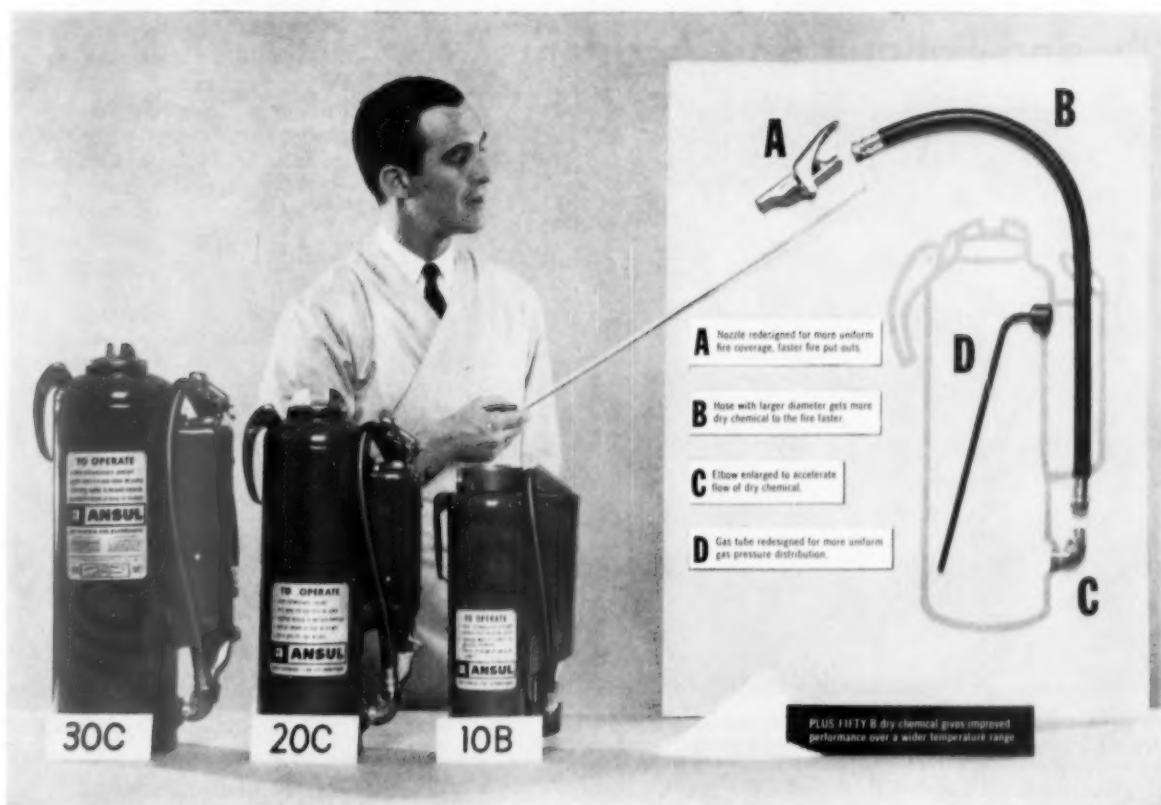
More than \$150 million is spent annually for care of the blind, the pamphlet continues. Counting compensation costs, medical expenses and lost production, eye injuries cost industry well over \$200 million a year. In contrast to these sums, less than \$2 million has been allotted for research in the blinding diseases, and an even smaller amount for organized prevention services.

The booklet also includes sections on lighting and color in industry, eye diseases, television and eye safety for children.

The booklet sums up the elements of a good industrial vision program:

1. Testing for basic visual skills.
2. Analysis of jobs for visual requirements.
3. Eye-safety equipment with correction, if necessary, to suit the workers eyes.
4. Arrangements for emergency eye care.
5. Proper use of illumination and color.
6. Group and individual education in eye health and safety.

Work fascinates some people so much that they can sit for hours just looking at it.



**Important design improvements in these Ansul Extinguishers give you more fire fighting power at no increase in price. Three years of research and more than 2000 fire tests turned up some significant new information on dry chemical extinguishment. Ansul engineers were able to design these findings into three new extinguisher models, the 10B, 20C and 30C. Result, greatly increased fire fighting power. All Ansul equipment is backed by a five-year warranty. This is the best way we know to say Ansul fire extinguishers are the finest of their kind made anywhere.**



**ANSUL**

The Ansul Chemical Co., Marinette, Wisconsin

# Chasing Fatigue and Accidents



**SAFETY COMMITTEE** of T&P's Dallas terminal stops to talk to L. R. Gordon (right), in-bound office manager. Committee members (left to right) are J. H. Meriwether, assistant superintendent, motor transport; A. R. Dewes, truck foreman, and W. R. Carr, freight agent.

FIVE YEARS AGO, when The Texas & Pacific Railway decided there were too many reportable accidents at its Dallas terminals and shops, management pointed a finger at the Safety Department. Right away, things began to happen.

Safety committees were organized and a safety education program for employees and their families was put in operation. Studies were made and improvements brought about in protective equipment. Reduction of fatigue was another goal and one of the remedies was installation of soft drink coolers.

J. B. Shores, director of employee and public relations, had this to say about cooler installations:

"At our terminals and shops there are no morning or afternoon breaks, so we decided to make ice-cold drinks available to all employees at any time.

"Our thinking was this: The workman knows better than the clock when he needs to stop and refresh himself. Our experience

had shown that a refreshed worker is a better and a safer worker.

"Some foremen objected that this added privilege would waste time. It worked out the other way—there was less lost time. In a couple of months criticism vanished and the critics became strong boosters."

In placing the soft-drink machines, safety studies were made to avoid traffic interference or hindrance of established work flow. In the Dallas office building, coolers are located near elevators on each of the 10 floors.

Profits from the machines go into employee-managed funds. Each shop and terminal has a committee to decide how the money shall be spent. One terminal uses the fund for flowers for sick employees and for an annual turkey dinner during the holidays. At another, the fund furnishes equipment for a soft ball league and pays for a summer picnic.

W. R. Carr, freight agent at the Dallas terminal, says:

"As a result of our safety drive

the past five years, reportable accidents at terminals and shops have been cut in half. Among 850 employees in our main office building there were no reportable accidents in 1955 or 1956. Last year there were only three reportable accidents at freight terminals. We now have top safety records at our various mechanical shops.

"We are convinced that our workers' right to stop and refresh themselves at will has been a strong contributing factor in reducing the number of accidents."

## PERSONALS

News of people in safety and related activities

### John T. Kenna to Head NSC's Church Division

JOHN T. KENNA has taken over the post of director of the National Safety Council's Church Safety



John T. Kenna

Activities Division, under the Prescott grant.

Mr. Kenna has been associate director for the Chicago-Northern Illinois region of the National Conference of Christians and Jews. He served as NCCJ regional director in Kansas and





## 2-TON BABIES PROVE 4-WAY'S STRUCTURAL STRENGTH

These frolicsome 2-ton circus babies demonstrate the ability of Inland 4-WAY Safety Plate to support tremendous weights. Because of 4-WAY's rugged strength, this 4' x 4' plate bears up under 4,000 pounds of pudgy pachyderm without a hint of strain.

The extreme structural strength of Inland 4-WAY Safety Plate is an important factor in plant safety. 4-WAY is not just another flooring surface material, but a steel plate that can be used as a structural member.

Strength, however, is only one of the advantages that 4-WAY offers. Its slip-resistance, durability, attractive appearance, ease of application, fire resistance, ease of fabrica-

tion and cleanability provide you with a combination of features unequalled by any other materials. Where can you use Inland 4-WAY Safety Plate? There are dozens of places in every plant where it can pay off in man hours saved . . . in providing safer, cleaner surfaces . . . in boosting general efficiency. For helpful suggestions and useful information, write to Dick Prendergast, Room 1262.

### INLAND 4-WAY® SAFETY PLATE INLAND STEEL COMPANY

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Kentucky from 1947 until January 1956, when he was moved to the Chicago post.

He has been consultant and director in summer workshops on human relations at the University of Kentucky and University of Chicago.

The Prescott grant was made recently by Mr. and Mrs. Sherburne Prescott of Greenwich, Conn. Mr. Prescott is chairman of the Greenwich Safety Council and a retired financier. The grant

is a gift of \$75,000 which will be used to aid churches and synagogues in a nationwide crusade for safety.

"Mr. Kenna's appointment is the first step by the National Safety Council to establish a special staff unit to work full-time on the project for the next three years," Ned H. Dearborn, Council president, said.

"The National Safety Council certainly shares the conviction of church leaders that nowhere can

the golden rule be practiced better than in traffic, and that nowhere can man better act as his brother's keeper than behind the wheel of a car.

"We believe the active support and leadership of church people in the war on accidents may well turn the tide of battle and halt the mounting toll of death and destruction from traffic accidents," Mr. Dearborn added.

"The National Safety Council is grateful that this grant will permit the Council to help make 'Thou Shalt Not Kill' the commandment of the highway."



## Completely New AO H-R-R COLOR BLINDNESS TEST

Most Accurate and Comprehensive Low-Cost  
Test Ever Developed

The New AO Hardy-Rand-Rittler color test answers a long felt need for an easy-to-give, comprehensive, low cost color blindness test. It is the result of more than ten years of scientific investigation, production and validation by eminent optical authorities.

It offers a simple way to insure job efficiency and prevent costly errors by rapid testing of workers whose jobs demand the ability to distinguish certain colors.

The test not only detects people who have Red-Green and/or Blue-Yellow color blindness but also types the deficiency and estimates

the degree of defective color vision present.

To make color testing easy the new test has been designed for the utmost simplicity of administration. For the vast majority of people it is completed in seconds. Simple, detailed instructions and understandable scoring sheets are part of the test. The recognition symbols used . . . the circle, triangle and cross are universally understood and the ingenious pattern of the plates allows no clues for memorization.

AO offices are located in nearly 300 major cities, or write

### Cameron to Head Vision Council

WILLIAM T. CAMERON has announced his resignation as director of safety prescription policy



William T. Cameron

and service of American Optical Company to take over the management of a newly-formed organization to be known as the Occupational Vision Council.

The services of the Council will be available to industrial concerns, professional organizations, optical companies and safety equipment manufacturers interested in initiating or expanding programs for the protection and correction of vision in industry. Its activities will include consultation and advice on vision screening techniques, practical plans for securing industrial-professional cooperation and the distribution

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Optical**  
INSTRUMENT DIVISION  
BUFFALO 15, N. Y.

Dept. J224. Please send complete information  
on the H-R-R Color Test.

Name.....  
School Title.....  
Address.....  
City..... State.....



## She Helped a Burglar make his Getaway

*Her home was in a part  
of the city where anything  
could happen*

WAKING ONE MIDNIGHT, she surprised a burglar in her room. As he leapt for the window, she stopped him. "You'll be hurt. Go down by the stairs and let yourself out."

Calm, kind, and acutely intelligent, she had long ago learned to stay human in emergencies—by living where emergencies were routine, in the heart of one of Chicago's poorest immigrant neighborhoods.

Here she had settled down to her life work—helping people. No sociologist or social worker, she left it for others to make this a science. To her, it was an art. An art she practiced so beautifully that, eventually, while she was loved around Halsted Street, she was admired around the world.



When, in 1935, Jane Addams of Hull House died, her little grandniece, seeing hundreds of children among the mourners, asked, "Are we all Aunt Jane's children?"

In a sense, we all are. For the work Jane Addams did and the lessons she taught still help us all. And they prove magnificently the fact that America's greatest wealth lies in Americans.

It is the character and abilities of her people that make this country strong. And it is these selfsame people who make our nation's Savings Bonds one of the world's finest investments. For in U. S. Savings Bonds your principal is guaranteed safe to any amount—and your interest guaranteed sure—by the government that represents the united strength of 163 million Americans. So for your family's security, buy Savings Bonds. Buy them at your bank or through the Payroll Savings Plan at work. And hold on to them.

**PART OF EVERY AMERICAN'S SAVINGS BELONGS IN U.S. SAVINGS BONDS**



*The U.S. Government does not pay for this advertisement. It is donated by this publication in cooperation with the Advertising Council and the Magazine Publishers of America.*

and use of corrective-protective glasses and goggles.

Mr. Cameron entered the safety equipment industry in 1924 and spent seven years with American Optical's Safety Division before joining the staff of the U. S. Department of Labor in 1937 as head of the Safety and Health Section. Following World War II, he returned to AO to organize and direct the company's industrial vision activities.

Mr. Cameron is widely known as a speaker at safety and professional conferences and as the author of articles on industrial vision and safety.

Occupational Vision Council headquarters have been established at Harmony House, Box 185, Thompson, Conn.

EUGENE E. QUENON has been appointed director of safety for Peabody Coal Company. He will be located in the St. Louis office and will be in charge of all safety, including strip and underground mines.

Mr. Quenon was connected with the U. S. Bureau of Mines since 1929, most recently as district health and safety supervisor of District E, Vincennes, Ind.

GEORGE LOUDON has been appointed ground safety director of the 58th Air Division (ADC) with headquarters at Wright-Patterson Air Force Base, Ohio.

Mr. Loudon retired last September from the Air Force in the grade of Chief Warrant Officer, W-3, with 29½ years' service. For the past four years he was ground safety director for the 4706th Air Defense Wing. His organization earned the National Safety Council's Award of Merit in 1953, the Award of Honor in 1954 and the Award of Merit in 1955.

Mr. Loudon started his safety work as educational & training officer of the Ground Safety Section, BADA in Burtonwood, England, under Col. Leonard F. Carter. This was the Air Force's first overseas ground safety program in 1944. In England he was closely associated with the Royal Society for the Prevention of Accidents

and other governmental agencies interested in the promotion of safety.

In 1945 he went to Bad Kissingen, Germany as safety director for the 9th Air Force. In 1946 he was named safety director for the United States Air Forces in Europe at Wiesbaden, Germany.

Since his return to this country he has served as assistant safety director, ADC, and as safety director for Offutt Air Force Base, for Fort Benj. Harrison and for the 30th Air Division.

He is an associate member of the American Society of Safety Engineers and a life member of the Society of American Military Engineers. He has been active in the Federal Safety Council, local safety councils and clubs in the areas where he has been stationed.

He has taken the Air Force safety courses at New York University, Northwestern University and Denver University. He has completed the teacher's driver training course at Michigan University and has studied industrial safety at the University of Illinois and under the Department of Labor.

FRANK W. DOLENCE has been named supervisor of health and safety by American Can Co. for its Atlantic Division. He will be responsible for health and safety activities in 19 American Can locations on the Eastern seaboard.

Mr. Dolence has had considerable experience in health and safety work during his 22-year career with the container firm. He has been employed in Canco machine shops at Waukegan, Ill., and Geneva, N. Y., and, until his assignment to Atlantic Division headquarters, was responsible for personnel activities at the company's Newark, N. J., machine shop. He succeeds the late L. CARL MESKIMEN.

JAMES C. FORBES, JR., Sewickley, Pa., has been appointed staff assistant in the Training Department of Jones & Laughlin Steel Corporation's Aliquippa Works.

Mr. Forbes joined J&L after



serving as assistant personnel supervisor at Blaw-Knox Company, Wheeling, W. Va. Before that, he was a safety supervisor for Blaw-Knox in Coraopolis, Pa.; senior safety inspector for American Steel Foundries, East Chicago, Ind.; labor analyst and safety analyst for Standard Oil Company, Chicago, and assistant per-





## What the sales manager learned at the PTA meeting

What *really* impressed the sales manager was the way the movie program *was put across*.

Everything teamed up for a smooth performance. The teacher set up the projector in jig time. She started with the opening frame—no distracting, flashing focus frame. The pictures were needle-sharp; the sound natural and comfortable.

The projector used was a Kodascope Pageant 16mm Sound model. And, as the sales manager later found out, this *portable* projector not only provides simple setups, single-switch reversing, fine sound and brilliant pictures—

it also is *lubricated for life*. This puts an end to the most common cause of projector failure, improper lubrication. It keeps a Pageant ready to go—on with the show.

Can you benefit from what the sales manager learned? You can if you use 16mm movies, whether for sales, advertising, or training.

Let a nearby Kodak Audio-Visual Dealer show you *how* in person. Or send the coupon for a free copy of V3-22. It gives complete details on the several Pageant models as well as other Kodak equipment for audio-visual use. No obligation either way.



**EASTMAN KODAK COMPANY, Dept. 8-V, Rochester 4, N. Y.**

4-223

Please send me complete information on the new Kodascope PAGEANT 16mm Sound Projectors, and tell me who can give me a demonstration. I understand I am under no obligation.

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ORGANIZATION \_\_\_\_\_  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_  
(Zone)

**Kodak**  
TRADE MARK

sonnel supervisor for Standard Oil in Casper, Wyo.

A native of Gary, Ind., Mr. Forbes attended schools in East Chicago, Ind. He was graduated with a Bachelor of Arts Degree in Economics from Wabash College, and earned a Master's Degree in Economics and Labor at the University of Michigan, Ann Arbor. He also has completed courses in Economics and Labor Legislation at Harvard University, Cambridge, Mass., and Northwestern University, Evanston, Ill. He is a member of the American Society of Safety Engineers.

HARRY B. ZIEGLER has been named manager of safety for Halliburton Oil Well Cementing Company. Formerly senior safety director for field operations, he succeeds IRBY B. CATE, who retired February 15 after 33 years with the company.

Mr. Ziegler joined Halliburton in 1926. After assignments as tester, fieldman, credit manager, and assistant division manager, he was transferred to the company's Duncan, Okla., headquarters where he helped operate the safety department.

As manager of safety he directs four safety supervisors at Houston and Midland, Tex., Casper, Wyo., and Duncan, as well as the Duncan shops' safety operations, including the shops' safety director, first-aid supervisor and assistant, and an industrial nurse.

J. I. JORDAN has been named to the new position of assistant manager of safety. He has been a safety director for field operations.

### Robert Scott Retires

On February 28, just a few days after his eightieth birthday, Robert Scott retired as director of safety and insurance for the Atlantic Coast Line Railroad Company.

Mr. Scott, dean of railroad safety men, was born in Scotland, February 15, 1877. He entered the service of the Atlantic Coast Line in 1893. Eleven years later he was transferred to the insur-



Robert Scott

ance department and two years later he was appointed superintendent of the department.

During World War I, the railroad expanded its program and he was named superintendent of insurance and safety. For several years he was also editor of *Atlantic Coast Line News*. In 1943 he was honored by Atlantic Coast Line for 50 years of service.

Mr. Scott has held numerous offices in the National Safety Council's Railroad Section and in the Safety Section of the Association of American Railroads.

He will continue to make his home at 101 North Fifth Ave., Wilmington, N. C.

EARL A. RINKER has been appointed safety director of the Rock of Ages Corporation, Barre, Vt. The company operates four granite quarries and a manufacturing division.

Rinker has been with Rock of Ages for more than 10 years and was formerly manager of the company's Number Two plant. He has been a member of the firm's executive safety committee since 1949. Since his graduation from Norwich University, Northfield, Vt., he has had wide industrial experience. He is a member of the American Institute of Mining and Metallurgical Engineers.

## Obituary

### M. C. DUPREE

M. C. (MIKE) DUPREE, 54, transportation manager for Ashland Oil & Refining Co., Ashland, Ky., died January 27 after a brief illness.

Mr. Dupree joined Ashland Oil in 1928 as assistant traffic manager, and three years later was promoted to transportation manager. During his association with the company, his department grew from one small river boat to the largest petroleum fleet of tow-boats and barges on the inland waterways, and from a few trucks to the present large tank-truck fleet.

Mr. Dupree was born August 26, 1902, in Gallia County, Ohio. He served as chief rate clerk with the Norfolk and Western Railway at Kenova, W. Va., from 1926 to 1928. Previously he was employed by the Baltimore and Ohio Railroad at Portsmouth and the Wheeling Steel Corp. at Portsmouth, Ohio.

He was a director of the American Waterways Operators, Inc. of Washington, the Mississippi Valley Association, and regional vice-chairman, Marine Section of National Safety Council. He was also a member of the Chicago Oil Men's Club, the Pittsburgh Traffic Club, the General Transportation Committee of the American Petroleum Institute, the Coast Guard Panel for Western Rivers, the American Bureau of Shipping, the Ohio Valley Improvement Association, the National Defense Transportation Association, and a charter member of the Transportation Club of the Petroleum Industry.

He was very active in promoting safety in the barge and towing vessel industry, as well as in his own company's inland marine operations.

During World War II he served with the Petroleum Administration for War.

Surviving are the widow, Mrs. Eloise Abel Dupree, two sons, Charles of Ashland and Jack of Nashville, Tenn., and three grandchildren.



## Minutes Ago This Jet Was Ablaze

This Jet Fighter skidded over half a mile and burst into flame at Worcester airport. In minutes Rockwood Double-Strength FOAM was blanketing the blaze. A dangerous fire was soon under control — because the airport and Worcester Fire Departments were prepared.

As you know, the danger of highly flammable liquid is not confined to aircraft. Every day tank trucks carrying volatile fuels move in and out of your city. Rockwood Double-Strength FOAM can help protect your city from this potential danger.

Rockwood Double-Strength FOAM

applied with a Rockwood FW Eductor fights flammable liquid and other fires of the same type fast and sure. Three parts mixed with 97 parts water forms a solid FOAM blanket that quickly reseals itself. The Rockwood Eductor with the new FW metering check valve and the Type SG60 nozzle applying the FOAM make short work of fire.

Be prepared. Put this fire fighter to work. Specify Rockwood FW Eductor when you order a truck. Write Rockwood Sprinkler Company, 1571 Harlow Street, Worcester 5, Mass.



### ROCKWOOD SPRINKLER COMPANY

*Engineers Water . . . to Cut Fire Losses*

*Distributors in all principal cities*



The Variable FW Metering Check Valve on the Rockwood Eductor is highly versatile (standard equipment). Both are incorporated in a single unit. Material is metered into the hose line in any proportion from 1% through 6%.

## Living with Heat

—From page 29

External use of water helps, too. Wash-ups and showers relieve fatigue.

### 3. Ventilation

Air movement promotes evaporation perspiration and therefore has an actual cooling effect as well as psychological benefits. It results in dropping the temperature below the "effective temperature"

of still air. "Effective temperature" is a relative index of the degree of warmth or cold felt in response to temperature, humidity and air movement.

General exhaust ventilation can effect considerable reduction of heat in workplaces having effective temperatures of 84 F. or lower.

Local exhaust ventilation. In many cases the source of heat is concentrated in relatively small areas. In such cases, exhaust hoods

and ducts, insulated to prevent re-radiation, will improve conditions noticeably.

Supplied air systems are sometimes more effective than exhaust ventilation in controlling temperature. In some cases the air may be taken directly from outdoors; in others it is cooled by passing through water sprays.

### 4. Radiant Heat

Baffles installed between heat sources and the workers are often helpful in reducing radiant heat.

### 5. Wet Processes

Where steam is released into the atmosphere of the work room uncomfortable and unhealthful working conditions will be found. As a health measure humid processes should be isolated and enclosed.

### 6. Insulation

In some industries, such as rubber and plastic molding, there are considerable areas of hot surface. Hot piping and hot ducts of the heated machine and vessel surfaces can be insulated.

### 7. Working Hours

Sometimes working hours can be adjusted to avoid the hotter part of the day. The plant may start work two hours earlier in the morning and close earlier in the afternoon. This, of course, wouldn't help those on the late afternoon and early evening shift.

### 8. Roof Cooling

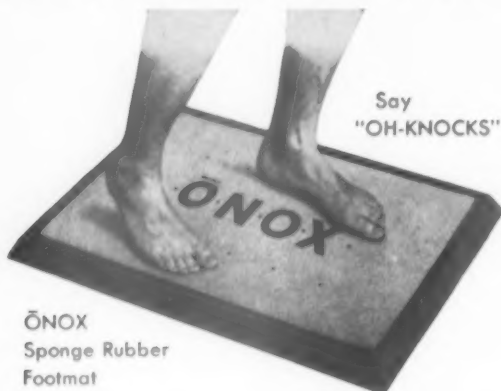
Water sprayed on the roof minimizes the effect of solar heat gain and reduces the temperature of air near the ceiling. It has been used effectively in many plants.

### 9. Home Air Conditioners

After TV, a room air conditioner is the goal of many a family. Since a good night's sleep is essential to an employee's health, safety and efficiency, there is some merit in helping employees finance the purchase of home air conditioners.

Patient: What are my chances?"  
Doctor: "Well, don't start any continued stories."

## 74% USE ŌNOX<sup>®</sup> TO STOP ATHLETE'S FOOT



ŌNOX  
Sponge Rubber  
Footmat

## 74 of the 100 Largest Manufacturers use ŌNOX SKIN-TOUGHENER

Modern research has upset old theories about Athlete's Foot control. Skin specialists have proved that the best way to prevent Athlete's Foot is to improve the condition of the skin. That's what ŌNOX does. ŌNOX mineral salts toughen the skin and make it resistant to fungus growth.

**No splash • No mess • No waste • Odorless  
Easy to maintain • Nothing to get out of order  
Men like ŌNOX • Relieves tired, aching feet**

### 60 DAY TRIAL OFFER

We will ship your trial order for any amount of ŌNOX and footmats. You pay nothing unless fully satisfied after 60 days' use.

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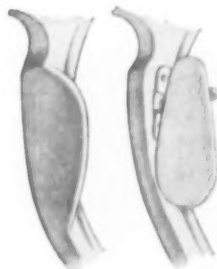
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BROOKLYN • CLEVELAND • NEW ORLEANS  
HAWTHORNE, CALIF.



**you get so much more  
for your eye safety dollars . . .**

New Redy-Fit attachable side shield is interchangeable; may be fitted to any eye size of B&L S-7 safety glasses. Write for introductory folder A-1518.

Temples styles are interchangeable. Cable (top) or Spatula style (lower) fit all sizes of both new S-7 glasses.



Choice of solid or adjustable nose pads to suit individual preference.



This is PROTECTION-PLUS safety eyewear. Both Titan (combination metal-plastic frame, above) and the all-acetate style (below) with Bal-SAFE impact-resistant lenses, provide added protection, good looks and new economy of use. In plano or prescription.



## **New Bausch & Lomb Safety Glasses**

**deliver PROTECTION PLUS**

**New interchangeability of temples and side shields permits new flexibility of use . . . with reduced inventory**

See for yourself how Bausch & Lomb PROTECTION-PLUS safety glasses introduce new economies while providing better protection. Phone the Bausch & Lomb supplier in your area. Or write for descriptive literature:

Bausch & Lomb Optical Co., 90316 Smith St., Rochester 2, New York.

**BAUSCH & LOMB**



## Weirton

—From page 19

ident of the West Virginia Safety Council. Then the work of selling safety to the city began. The police and fire departments, schools, industries, utility companies, stores—in fact, all phases of life in the community—conducted their own specific activities under the coordinating arm of the general committee.

The Kiwanis Club placed wrecked automobiles along routes entering the city.

The V. F. W. and American Legion distributed safety literature to motorists.

City firemen conducted school fire drills and distributed literature on home safety.

Large outdoor posters were placed at strategic points in the city.

Displays of industrial safety

equipment were placed in store windows.

The Civil Defense organization prepared a striking display.

Schools conducted slogan, poster and essay contests, with the Safety Week Committee providing the awards.

In addition to these activities, dozens of other projects were undertaken on a club-level basis by civic and fraternal organizations to stress the safety theme.

The Weirton Daily Times solicited the cooperation of merchants in featuring the safety theme in their advertising.

The general committee provided special printed material for use during the week. Payroll inserts were distributed to employees of local industry.

Automobile bumper signs bearing the Safety Week slogan, "Safety Comes First in Weirton," were distributed by gasoline dealers along with a driver pledge card bearing the National Safety Council's "Top Ten" rules of the road.

Police distributed driver courtesy cards to motorists who were observed exercising courtesy on the city's streets.

The Fraternal Order of Police Associates provided safe driving signs for parking meters. Signs warning pedestrians of the dangers of jaywalking were stencilled along curbs under the supervision of Chief David Reese and the City Police Department.

A series of five-minute interviews based on material furnished by the National Safety Council brought radio listeners important



**Power failure and sudden darkness bring**

## PAINFUL INJURY

... but Exide Lightguards\* go on automatically when lights go out—prevent sudden darkness. They protect you against the risk of injuries. Plug into your regular outlets. Built-in automatic charger. Batteries last for years. Choose from four models. Send coupon today.



\*Lightguard is a trademark of The Electric Storage Battery Co., Reg. U.S. Pat. Off.

**BE SAFE—MAIL COUPON NOW**

**Exide**

Industrial Division  
The Electric Storage Battery Company, Phila. 18, Pa.

Send details on ☐ portable Exide Lightguards  
☐ larger emergency systems

Name .....

Street .....

City ..... Zone ..... State .....



"This being 'No Accident Week,' I thought I wouldn't take any chances."



## DANGER: ACID! BUT HE'S SAFE

**Lukens Steel Co. protects him with clothing of neoprene—a Du Pont man-made rubber**

His job is to read meters of storage tanks containing hydrochloric, nitric and sulfuric acids. Lukens Steel Co., Coatesville, Pa., shields him from fumes and accidental splashing with neoprene protective clothing. Other Lukens workers wear neoprene gloves, hoods and shoes to safeguard against exposure to heat, oil, abrasives and corrosive liquids.

Reports Frank E. Bird, Jr., Supervisor of Safety and Plant Protection, "Neoprene is the best all-around safety material I know. Not only does it have excellent wearing qualities, but it is resistant to heat, oil and abrasion."

Neoprene gives workers peace of mind. It won't soften or crack when splashed with oil and chemicals or exposed to fumes and weather. Heat and flexing have little effect on it, and it remains flexible for a long service life.

When you specify long-life safety clothing of neoprene, you're sure your workers are protected. Your local rubber goods supplier is the man to see about it . . . soon.



Better things for better living  
... through chemistry

### NEOPRENE

—made by Du Pont  
• for 25 years

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Please put my name on the free mailing list for  
the ELASTOMERS NOTEBOOK containing illustrated  
case histories and new applications for neoprene.

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City, State \_\_\_\_\_

MAIL THIS COUPON NOW—WHILE YOU'RE THINKING ABOUT IT →

safety information throughout the week. Community leaders, police and high school students participated in the interviews. These were coupled with radio spot announcements and television stories and spots to bring the message to the entire Weirton area.

At the Safety Week meeting of the Kiwanis Club, Lieut. T. R. Welty, director of the Accident Prevention Bureau of the West Virginia Department of Public

Safety, traced the state's traffic accident experience and advanced helpful ideas on how people could help the state police in making highways safer. With the city police, Lieut. Welty visited the schools to talk with students of driving age.

Next day, Dr. Allen Stockdale (now deceased), of the National Association of Manufacturers, addressed Rotarians and later spoke to Weirton Steel management

people. He stressed the thought that safety comes from the heart—that a regard for one's fellow men carries with it a regard for the safety of others, citing as an example Weirton Steel's safety creed: "Production is important but safety comes first with us. The Weirton Steel Company is not interested in making money or records at the expense of human life or suffering."

Climax of the week came Friday evening with a recognition dinner honoring the police department for its continuing program of protecting the city's citizens. On behalf of his department, Chief David Reese accepted a bronze plaque which now hangs at police headquarters.

Mr. Hopkins of the State Safety Council addressed some 200 people gathered for the recognition dinner, pointing out that "to do the job of safety education West Virginia needs, its people must show the same spirit that has been shown in helping to control polio, heart disease, and other agents of death.

"One method of gaining this spirit is through organization—the kind of organization that provides a means of reaching into the human mind and causes people to stop, look and listen at the moment of a careless action."

A record of no fatalities during the week was, of course, gratifying to the sponsors of the drive. But to them it was just the beginning of a long range program. With so many organizations participating, there were enough persons involved to put the program in contact with every home in the city and surrounding area. It uncovered great resources of safety leadership in the community.

Weirton's safety leaders feel that safety interest did not end with the conclusion of the campaign. The organizations which took part last October are including safety in their regular programs.

Weirton is planning to make safety week an annual event.

There's nothing that will take the starch out of a man like a wife on a diet.




*Safe . . .* because the walking surface of Vul-Cork's Micro-Cell Cushion Neoprene is made up of hundreds of split cells, which act as vacuum cups on any walking surface.

*Comfortable . . .* because Vul-Cork's Micro-Cell Cushion Neoprene is actually 40% lighter on the average than other conventional neoprene composition soling materials.

Completely non-absorbent, too, with its gas filled cells providing not only a pneumatic cushioning but acting as an insulating barrier keeping out water, vapors and heat or cold.

Vul-Cork Micro-Cell Cushion Neoprene soles are used on the best work shoes made. Write for free booklet describing all Vul-Cork soles . . . one of which is sure to answer your safety problems.

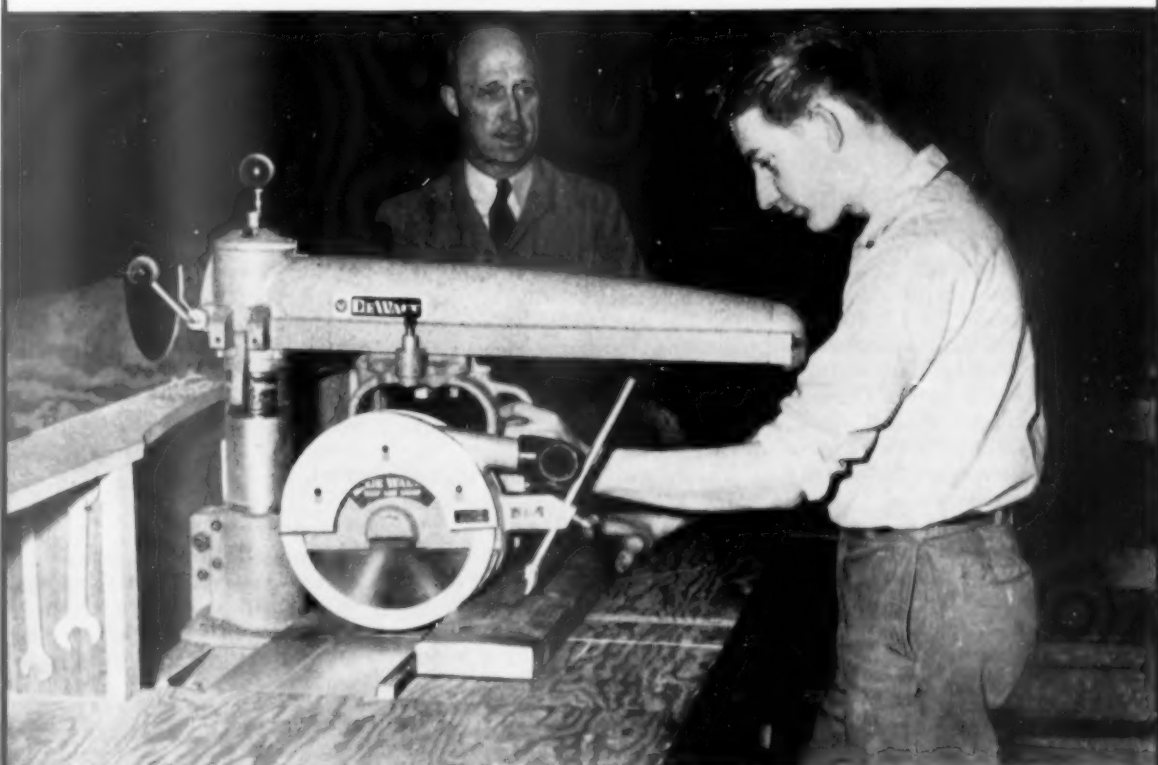
Vul-Cork Sole Division, Cambridge Rubber Co., Taneytown, Md. Makers of 

# VUL-CORK & VUL-CORK NEOPRENE

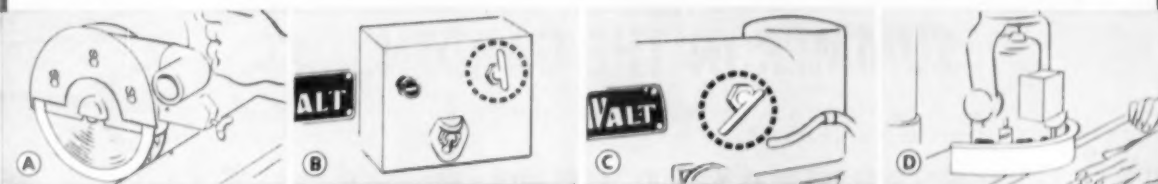
so light, so flexible, so resilient you can roll them up . . . right in the palm of your hand.



## Safe cutting starts with a safe saw...



**And DeWalt® has the safest record in industry!**



You need these exclusive operating safety features: **A**—Simpler, safer top-side cutting, with exclusive safety guard. You always see your mark and your saw. **B**—Power brake stops saw in 4 seconds for added safety. **C**—Safety key switch prevents unauthorized use. **D**—DeWalt becomes tilting arbor shaper with exclusive safety guard...gives 50% more shapes per cutter. Combines 12 basic power tools, builds into workbench...gives safer straight-line handling.

Do your plant cutting with an **AMF DeWalt**—preferred in home, school, and industry for accuracy, versatility...and the **safest record of performance**. Arm raises, lowers, swings 360°. Motor and saw ride on arm, rotate 360°, tilt downward past 90°. Powerful direct-drive motor accommodates any circular tool, saves cost of

separate machines. Enjoy the efficiency *and* safety only a modern **DeWalt** offers.

A wide range of sizes...from 9" to 20", ¾ hp to 10 hp...for construction, maintenance, crating, pattern shops, production lines—all industrial cutting. From just \$239 up.

See your supplier or send for **FREE BOOKLET**.



DeWalt Inc., Dept. NS-704, Lancaster, Pa., Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY

- ☐ Please send **FREE** Booklet on Job-Tested Safety Cutting Methods  
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## Sanitation Show Scheduled For Chicago Next October

THE EXPANDING importance of sanitation maintenance will receive national recognition next fall when the second annual Sanitation Maintenance Show and Conference takes place at Navy Pier, Chicago. Produced by Orkin Expositions Management, the show will be held October 14-16, 1957.

Sponsored by the Industrial Sanitation Management Association, Association of Food Industry Sanitarians, and the National Association of Bakery Sanitarians, the show scored a strong success in New York last October when 3,500 sanitation maintenance executives from 30 states and 10 foreign countries attended.

Based on this strong recognition of the industry's only show and conference for the actual buyers and users of sanitation maintenance products and services, the sponsors expect attendance to double last year's turnout.

The show is aimed at sanitation maintenance executives in industrial, commercial and institutional establishments. A recent survey indicated that at least 70 per cent of these executives influence the purchase of sanitation maintenance products; their individual responsibility extends over an average of 5 plants, including 23 buildings with a total of 533,000 square feet.

Many displays at the show will focus attention on the uses and maintenance factors of such products as scaffolding, paints and painting equipment, floor and wall coverings, plumbing equipment, refrigerating and air conditioning equipment and lighting equipment.

These are in addition to displays of the customarily used products such as: cleaners, disinfectants, skin protectants, polishes and finishes, paper products, soaps and detergents, waste receptacles, floor scrubbing machines, vacuums and power sweepers, chamois, sponges and wiping

cloths, insecticides, steam cleaners, dispensers, and vending machines, humidifiers, brooms and brushes, mopping equipment, safety devices, incinerators and dust collectors.

Under the chairmanship of J. Lloyd Barron, manager of the Sanitation Department of National Biscuit Company, a series of important conferences on sanitation maintenance will again be held concurrently with the Show at the Navy Pier. Experts will speak on various phases of the field; the popular "clean up" session will provide an industry-wide forum for the exchange of ideas.

Information can be obtained by writing to Orkin Expositions Management, 19 W. 44th St., New York 36.

A night watchman heard unusual noises in one of the darkened offices, and shouted: "Come out with your hands raised, so I can see who you is, or I'll come in and see who you was!"

## USE YOUR FREE KOOLPAD THIS SUMMER IN THE GARDEN...

Here's an answer to the hot weather!

When you have chores to do on one of those hot sticky days when all the pores are open, simply reach in the drawer for your StaSafe Koolpad ... dampen it in water ... put it on. You'll be surprised at the delightful cooling effect. And, since the cellulose sponge holds up to six times its own weight in water, your Koolpad will soak up perspiration and prevent frequent brow mopping. When you're finished working, wash out your Koolpad in seconds, and it is ready for use again.

Although Koolpads are used primarily in industrial plants to cut lost time and save production during the summer, we felt you might like one for yourself to wear around the house. You'll find the advantages of a Koolpad at home are as great as the advantages at the plant.

Write today for a free Koolpad for your personal use.

### STANDARD SAFETY EQUIPMENT COMPANY

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## Where will FIRE start in your plant?

Whatever the hazard, dip tanks, record storage vaults, spray booths, Kidde's carbon dioxide fire extinguishing system protects your plant 24 hours a day, gives you the fastest, safest fire protection ever made! Product of more than thirty years' experience, the Kidde system boasts more features than any other make on the market today. Features like:

*All operating parts completely enclosed to guard against fouling or accidental operation.*

*No clumsy triggering methods or falling weights.*

*Self-contained; no outside power needed.*

*Visual indicators to show if system has been operated.*

*Easy testing of all operating parts.*

*No parts to replace after operation or test.*

Fast-acting, clean carbon dioxide does the job that no other extinguishing agent can do: snuffs fire out in seconds, then vanishes into thin air. Won't harm valuable machinery, leaves no mess to clean up. Write for Kidde's pressure operated carbon dioxide fire extinguishing systems booklet today.

# Kidde



**Walter Kidde & Company, Inc.**  
445 Main St., Belleville 9, N. J.

Walter Kidde & Company of Canada Ltd., Montreal—Toronto

# WHAT'S NEW

IN  
NATIONAL SAFETY COUNCIL SERVICES \*

## Operation Safety

The number of traffic accidents due to mechanical failure each year is not known. According to reports from 24 states, about 8 per cent of the fatal traffic accidents involve one or more vehicles faulty in at least one respect. But how many cars are so badly smashed up that to detect faulty brakes or a defect in the steering mechanism after the crash is impossible?

The 1956 National Vehicle Safety-Check for Communities showed 1 out of 5 of the 2 million vehicles inspected to be in need of maintenance attention to one or more parts. Reports from states having official periodic inspection show rejections because of unsafe conditions varying from 13 to 71 per cent of the cars inspected.

"You can't be safe in an unsafe car," is sound advice for every motorist to heed.

Your company can help improve the standards of vehicle maintenance in your community by promoting the Vehicle Safety-Check this month among your employees. You might give your workers a half day off to take their cars in for inspections. You can also assist the Vehicle Safety-Check committee in your community in many ways.

The May Operation Safety program adds support to the National Vehicle Safety-Check for communities. The program can be an effective traffic safety project in which the public can participate. It also helps direct attention of

all drivers in the community to this problem. Out of this sufficient public support can be built for legislation to establish official periodic inspection.

Program and publicity materials in the kit include many useful tools for conducting a safety-check program. In addition, a folder with a convenient tear-out business reply card for ordering safety-check planning materials from the National Vehicle Safety-Check for Communities is enclosed in the kit. If no plans are under way in your community to join in the May Safety-Check program, perhaps your company can initiate them.

Posters and leaflets for the month spotlight vehicle maintenance and the second "Back the Attack" leaflet—on moral responsibility—is also sampled in the kit. For information write to National Safety Council, 425 N. Michigan Ave., Chicago 11.

## 1957 Vacation Booklet

The Council's new vacation booklet, *Let's Go on a Safe Vacation*, is in stock and ready for the biggest vacation splurge in the nation's history.

Safety on the job may be almost instinctive to your workers. But at vacation time people not only relax from their job cares, but, all too frequently, let down their guards against off-the-job accidents.

*Let's Go on a Safe Vacation* tells the worker that he must take over as safety director for his family during those weeks away from the job. In quick cartoon fashion it tells the ins-and-outs of water safety, highway safety, camping safety, and even includes some hints for the stay-at-home vacationer.

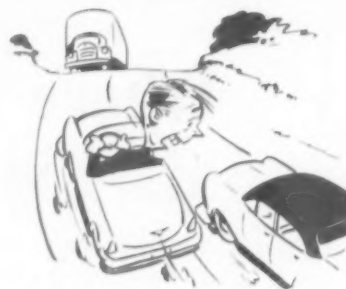
The booklet not only provides

workers with the ways of enjoying a vacation without accidental interruption, but also provides management with an excellent piece for the promotion of better employee relations. For a few cents the company sends the vacationing employee on his merry way with a feeling that management is interested in his off-the-job welfare and that of his family.

And passing out the booklet also makes sense from the hard dollars-and-cents angle. For no matter where an accident occurs—whether in the plant or on vacation—it can mean an absent employee, an idle machine, a temporary replacement.

*Let's Go on a Safe Vacation* is a handy 8-page booklet printed in full color. Don't pass up this safety and morale builder!

## Calendar Contest Winners For April



A safe guy on the job was young Sid,  
But in traffic he behaved like a kid,  
He would pass on a hill  
Just to show off his "skill"

How would you have completed that limerick? Mrs. Mary Stark, wife of L. E. Stark, state agent for Loyalty Group, Ins., Birmingham, Ala., won the first prize of \$100 in the National Safety Council's "Save-a-Life Line" Contest with this line:

Mourning headlines note **PASSING**  
of Sid.

The "Save-a-Life" Line Contest appears monthly on the back pages of the Council's Calendar. The theme for January's contest was "Showing Off Can Cause Trouble."

Second prize of \$50 went to Mrs. Ned Fish, secretary, department of chemistry, University of Missouri, for this line:

'Twas those "hillBULLY shows" that  
doomed Sid!

—To page 90

\* Look to this page each month for latest news about NSC services. Address request for additional information, samples or prices to the Membership Department.





**TELEPHONE MEN AND WOMEN** attend one of the training courses in day-to-day matters of telephone service, employee and public relations. These particular courses are for management people in the Bell Telephone Companies throughout the country. There are many other Bell System programs for the training and advancement of telephone people at various stages of their careers. They include broad liberal arts courses at leading universities as well as schools within the business for executives.

## **"From the building of people comes the progress of the business"**

*Bell System's management training programs benefit telephone users and the company as well as telephone men and women.*

There is nothing more important to good telephone service and to the future of the business than the finding and developing of capable people.

The Bell System has long been among the leaders in this field and it has pioneered many new methods for the training of telephone men and women at various stages of their careers.

What we aim to do is to provide both the opportunity and the preparation for a better job. The long-standing policy of making promotions from the ranks also helps to assure the continuing know-how and spirit of the organization.

This in turn brings far-reaching benefits to all who use the telephone and to the progress of the company. It is an important reason for today's good service and the solid foundation for still better things to come.

*Working together to bring people together...* **Bell Telephone System**





# Safety Engineers

and all other executives  
responsible for life and property—  
**Send for complete data on this  
New EMERGENCY  
LIGHTING SYSTEM  
by Standard**

The only system of its kind listed by  
**UNDERWRITERS' LABORATORIES, Inc.**  
Exceeds Requirements of the **NATIONAL ELECTRICAL CODE**

**AREA-CONTROL PANEL**

**DISTRIBUTION PANEL**

**CONTROL CONSOLE**

A complete, self-policing emergency lighting system that guards against costly confusion or panic caused by sudden darkness.

Takes over in a split second! The instant power fails for any reason, at any time, Standard's centralized system goes to work automatically — provides instantaneous Emergency Lighting in effected areas. Work schedules or business continues without interruption.

**Always on Guard!** 100% Electrically Supervised. Standard's Emergency Lighting System *protects itself* against human neglect or accidental disarrangement. Should anything in the system go wrong, doubly supervised circuits go into action instantly! A burned out lamp, accidental damage, or even a light fingered bulb snatcher — is reported to the Area Control Panel.

Buzzers buzz! Lights light — and the trouble can be corrected before a lighting emergency arises.

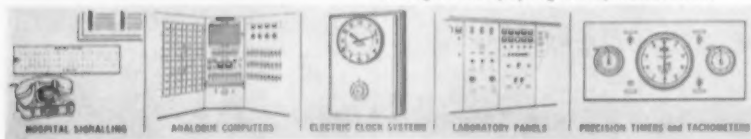
**Always on Guard!** The Flexlab Nickel-Cadmium, alkaline battery has an expected life of more than twenty-five years, requires near-zero maintenance, does not corrode like lead-acid batteries.

This new and unique Emergency Lighting System is streamlined, good looking, designed to match the decor of modern buildings. Centralized power and control, concealed wiring and handsome fixtures replace box-on-the-wall units. Standard's Emergency Lighting System is built-in just like the fire alarm and sprinkler systems.

**Send for Publication # 243**

## THE STANDARD ELECTRIC TIME CO.

107 Logan Street, Springfield 2, Massachusetts



Third prize of \$25 was awarded to Robert B. Rule, who is an engineer with E. I. duPont de Nemours & Co., in Louisville, Ky. Mr. Rule's line was:

His undoing was he was outdid.

Thirty \$5 prizes went to:

Doris L. Houk, Aetna-Standard Engr. Co., Ellwood City, Pa.

Mary Ella Longhway, Wilson & Co., Oklahoma City, Okla.

George S. Hubbard, Jr., Pearl Harbor Naval Shipyard, Pearl Harbor, T. H.

Mrs. H. L. Miller, Warren Petroleum Corp., Houston, Tex.

Paulene Young, Corn Products Refining Co., North Kansas City, Mo.

Margaret A. Porter, (Individual Member), Houston, Pa.

Mrs. Jess Massingale, (Individual Member), Shelbyville, Ind.

Ellra M. Bostic, Mason Dixon Lines, Kingsport, Tenn.

Francis R. Roberson, U. S. Dept. of the Interior, Omaha, Neb.

Robert S. Martin, (Individual Member), Rochester, Minn.

Thomas Paull, D. M. & I. R. Ry. Co., Duluth, Minn.

Mrs. Barbara B. Constant, Hughes Aircraft Co., Culver City, Calif.

C. W. Krueger, Southern California Gas Co., Los Angeles.

Mrs. Vera A. Pelton, United Air Lines, Seattle, Wash.

Lois McCarthy, Kraft Foods Co., Pocatello, Idaho.

Ralph A. Gomes, U. S. Post Office, Pittsburgh, Pa.

Earl Brandenburg, The Formica Co., Cincinnati, Ohio.

Mrs. Arlene Holsworth, Republic Steel Co., Massillon, Ohio.

Mrs. H. E. Manion, Detroit Diesel Engine Div., Detroit, Mich.

Hugh McLean, Bell Telephone Company of Canada, Hamilton, Ont.

L. J. Burke, State Dept. of Health, Seattle, Wash.

Mrs. Margaret B. Collins, Bradford City School Dist., Bradford, Pa.

Barbara J. Shields, Scintilla Div., Bendix Aviation Corp., Sidney, N. Y.

Mrs. Arnold Adams, (Individual Member), Milton, Mass.

Clifford E. Chandler, E. I. duPont de Nemours & Co., Martinsburg, W. Va.

Bill Nickerson, Cincinnati Chemical Co., Toms River, N. J.

Elmer F. Windstein, U. S. Post Office, Pittsburgh, Pa.

Robert W. Phipps, U. S. Gypsum Co., Fort Dodge, Iowa.

Raldon R. Wiles, Exchange Lemon Products Co., Corona, Calif.

Al Boesl, Niagara Mohawk Power Corp., Buffalo, N. Y.

## Diary

—From page 14

of accidents a safety program would prevent."

I made it as emphatic as I could. "They are just the kind of accidents that a good safety program can prevent. I wasn't on the ground to make a first-hand inspection on any except Dennison's—but I've done some checking.

"Blacksity fell because he was using a rickety ladder in an area where passing workers could bump it. Your men are still using rickety ladders in similar situations.

"The girls down in assembly frequently cut their fingers on the sheet metal case edges or puncture them on those springs—and there isn't one in three going to first aid to get the cuts treated. Your hand truckers are still doing all sorts of damn fool things with their trucks.

"There's plenty of bad lifting being done in the plant. The first day I came up the front steps, I slipped on the ice myself and nearly fell. And as to eyes—do you seriously think that when the machine shop foreman fails to put on his goggles at a grinder his hands are always wearing theirs?

"John, I tell you in all seriousness that if there's been any flukiness in your accident rate, it is that it's been too low."

I'll give McCarthy credit. He looked the facts in the face and changed his mind. He's okayed a program of employee training on a large scale. He's issued directives to maintenance on both ladders and step sanding. He's personally speaking to a meeting next week on eye protection.

And maybe I can get back out to the construction job where, as he justly said at the start of our talk, I am probably very badly needed.

*Isn't it funny—it takes a baby approximately two years to learn to talk, and some 60 or 75 years to learn to keep his mouth shut.*

Some people are easily entertained. All you have to do is sit down and listen to them.

## New safety garments help Lukens Steel condition 3 million tons of steel without a disabling injury!



### 3M Brand Aluminized Fabric cuts lost worktime . . . boosts production!



Mr. Frank Bird, supervisor of safety & plant protection, and Paul Lake, General Foreman—Steel Conditioning Yards, Lukens Steel Company, Coatesville, Pa.


You can profit from Frank Bird's experience at Lukens Steel! The Scarfing Department of their Steel Conditioning Yard had a two-fold problem: to protect the men from accidents and cut down costly lost worktime.

Working closely with Mr. Lake, Mr. Bird outfitted every man with new 3M Brand ALUMINIZED FABRIC safety garments. The amazing contribution made by these garments is told above. Three million tons . . . without a single disabling injury in 2,229 days.

Why don't you do as Lukens Steel did, and look into 3M Brand ALUMINIZED FABRIC. For this is the new material in safety garments that allows work in the vicinity of 3000° F. exposures . . . reflects 90% of radiated heat . . . protects against metal splash . . . lasts more than twice as long as old-style, heavier garments. Men like to wear it, too. 3M ALUMINIZED FABRIC safety garments are light, comfortable, flexible . . . efficient to work in. Full line available . . . coats, aprons, gloves, etc.

Send the coupon below for full details.

3M Brand Aluminized Fabric Garments are available from leading safety clothing manufacturers.

 <b>ALUMINIZED FABRIC</b>	<b>Minnesota Mining and Manufacturing Co.</b> <b>Dept. NK-47, St. Paul 6, Minn.</b>  Please send complete details and free sample of new "3M" Brand Aluminized Fabric.  Name _____ Company _____ Address _____ City _____ Zone _____ State _____
<small>The term "3M" is a registered trademark of Minnesota Mining and Manufacturing Co., St. Paul 6, Minn. General Export 99 Park Avenue, New York 16, N. Y. In Canada: P.O. Box 757, London, Ontario.</small>	

# Chile Moves Ahead

—From page 21

safety program as carried out in their El Teniente mine, for example, is considered the most successful and convincing practical safety experiment in Chile today.

In 1955, about 250 companies met their obligations toward their employees within the time limit set by government investigators. About 37 per cent of the plant inspections by teams of government technicians were made at the operator's invitation. In that year, 557 plants and mines employing 63,660 workers were inspected.

Suggested improvements in working conditions benefited 17,084 workers at a cost of about 156 million pesos (about \$312,000). The central laboratory made 541 tests of environment and biological conditions; the engineering branch completed studies for 62 ventilating systems and revised 28 others; the labor medicine section made clinical examinations of 2,635 workers for disability benefits and 1,295 due to occupational diseases; 6,255 x-ray pictures were taken.

Pointing to the Braden Copper Company's safety and health record in Chile is a source of envi-

able pride for the government as well as for company employees. The company in 1955 won the Inter-American Safety Award for the ninth consecutive year and in so doing proved that safety at work is a saving in human resources.

To summarize the extensive program carried on in Braden's El Teniente mine, a recent report by an independent group of doctors, delegated by the Chilean Industrial Safety Services, was made after a three-day inspection of the mine and adjacent areas.

Medical services, they reported, are well organized through the El Teniente installation. Hygiene, preventive medicine, therapeutic professional attention with complementary services, permanent emergency service, and medical attention in the home comprise the company's considerations. Dental and pharmacy services are also incorporated in the over-all medical plan.

To do this, the company employs 20 doctors, 3 chemists, 4 pharmacists, 10 midwives, 8 graduate nurses, 9 nursing assistants, 17 hospital attendants, a sanitary

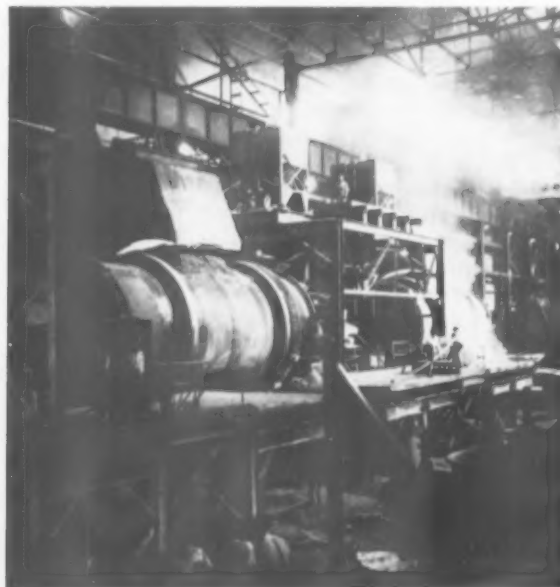


**CHILDREN** on their way to school at Sewell. Workers' homes are located on the mountainside.

expert, and 70 office employees. This corps of doctors, scientists, and technicians cares for the people of Sewell, Caletones, Coya, Rancagua, and Santiago. Braden's company health service cares for 20,052 persons. Medical teams visit company camps at Barahona, Chacayes, Bocatoma Pangal, and



**NIGHT** shot at Sewell; thickening tank in foreground.



**TWO** of four converters in Caletones smelter.



other smaller company installations at frequent intervals.

At plant sites, the company maintains hospitals equipped with modern facilities and adequately staffed. At Sewell there is a hospital with 150-bed capacity, at Caletones 16 beds, at Coya 14 beds, with smaller hospital accommodations in adjacent camps.

Sewell, with a population of 11,000 now has the lowest infant mortality rate in Chile. In 1942, the infant mortality rate was 112.75 per thousand, and this figure was reduced to 55.65 per thousand by 1953. Medical services at these hospitals include surgery, maternity wards, a children's ward, x-rays, clinical laboratories, and other services for the sick and injured.

In addition, a far-reaching accident prevention program is carried out to make working conditions as safe as possible at the El Teniente mine. There are 6 ventilators with a capacity of 50,000 to 180,000 cfm. of air each at various levels throughout the mine. There is also an emergency medical station in the mine to give first aid at the scene of the accident.

In the mine are 86 stations for control of ventilation. Special telephone call-schedule, signal and lighting systems; fire control units; emergency refuge chambers; stench and light-flashing devices for warning underground personnel in the event of fire; detailed mine fire procedure plans assuring prompt and orderly evacuation of personnel to the surface, and adequate protective equipment for all types of accident and health hazards—all are a part of the company's plan to protect the worker.

Controlling rock dust in the mine is of primary importance. Periodically air samples are taken at various underground points and analyzed in the laboratory where dust particles are determined on a modern micro-projection equipment. If the dust count is above the prescribed limit for safety, measures are quickly instituted to purify the air, reducing the dust counts within permissible limits. The dust and ventilation laboratory is equipped

**Don't Slip up  
on Safety**

# **FERROX**

## **is low-cost insurance**

Serious slipping accidents can happen anywhere—on stairs, walkways, ramps, loading platforms, washrooms, machine areas, etc. Low-cost Ferrox provides safe footing on all walking surfaces, wet or dry. It can be trowelled over wood, concrete or metal ... sticks tight ... resists oil, chemicals and weather conditions. One gallon covers approximately 40 sq. feet.

Write to Department 21 for Ferrox Bulletin.



AN 1288

**AMERICAN ABRASIVE METALS COMPANY**

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## Pouring man hours down the drain?

**W**asted hours in floor maintenance can clog up your whole profit and loss set-up.

LEGGE provides a waste-proof program of upkeep that accounts for every work hour of every day. What's more, LEGGE Polishes give longer wear per application. Even heavy traffic won't "walk 'em off". And they rarely need the labor-consuming job of stripping. Many buildings report savings of up to 33 1/3% with LEGGE Maintenance.

And here's a big Plus: LEGGE Polishes go up to 75% beyond U. L. requirements for slip-resistance. You reduce slip-accidents along with the absenteeism that follows. And an improved Safety record is usually reflected in lower insurance rates. Want facts? Clip the coupon.

### Installing Conductive Floors?

Improper maintenance destroys their effectiveness. LEGGE Cleaners and Polishes retain their conductivity. Send for Free booklet.

### Walter G. LEGGE Co., Inc.

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- ☐ O. K. Show me how LEGGE can save me money.  
☐ Send Free booklet on conductive floor maintenance.

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Firm .....

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City ..... Zone ..... State .....

with gas detectors. This system for detecting air impurities is the most advanced in Chile and is continually being studied and copied by foreign mining experts.

Measures adopted for the control of dust include artificial water sprayers at working levels, 100 per cent wet drilling, blasting operations made only at the end of the shift, water sprayed in all working places where dust is present, additional ventilation systems, compulsory use of respirators, and other protective devices.

At the milling plant, a dust collection system, with five extractors, each capable of moving 35,000 cfm., keep the air free of contamination.

To reduce the danger of fire, Braden has built all its underground offices, warehouses, repair shops, lamp and tool lockers of fire-resistant materials. Concrete surfaces blanket the entrances, steel doors close off tunnels, isolating systems close off various sections in emergencies, safety refuge compartments are strategically located, compressed air and water are supplied to all sections, permanent and portable fire-fighting equipment is kept in readiness at all times.

The outbreak of fire in the mine is immediately communicated to workers by light signals, telephone, and to alert workers who may be out of view of these signals, ethyl mercaptan is injected into the main compressed air line which is easily noticed by its characteristic odor. Fire rehearsal drills are staged frequently to prepare the workers to combat fire and to make them acquainted with routes of exit.

Every worker is impressed with the importance of safety at El Teniente. All new employees are given a five-day, 10-hour instruction course in safety orientation and special courses in first aid are mandatory for all foremen and selected groups of workers. Accidents are carefully investigated and scrutinized. It is from these accident analyses that new safety measures and devices evolve to prevent the possibility of recurrence.

The Industrial Safety Depart-

ment of Braden Copper Company was highly commended by the visiting Chilean delegation as a model of safety in operation.

#### Hydrostatic Pressure Tests Fire Extinguishers

COPPER FABRICATED fire extinguishers have been known to explode when activated and cause injuries to users. Such explosions usually result when the shell of the extinguisher has been weakened by damage or deterioration and for this reason extinguishers should be examined at regular intervals and tested for safety.

Hydrostatic testing, as recommended by the NBFU in its *Standards for the Installation, Maintenance and Use of First Aid Fire Appliances*, will detect weaknesses which may be present. The test is designed for soda-acid, water, foam, and loaded-stream extinguishers and should be conducted by the manufacturer, a qualified service agency or testing laboratory, or by the user if competent assistance and facilities are available.

The test involves emptying and cleaning the extinguisher thoroughly, including removal of internal parts. The extinguisher is then filled with water, leaving no air trapped which may cause a rupture during the test.

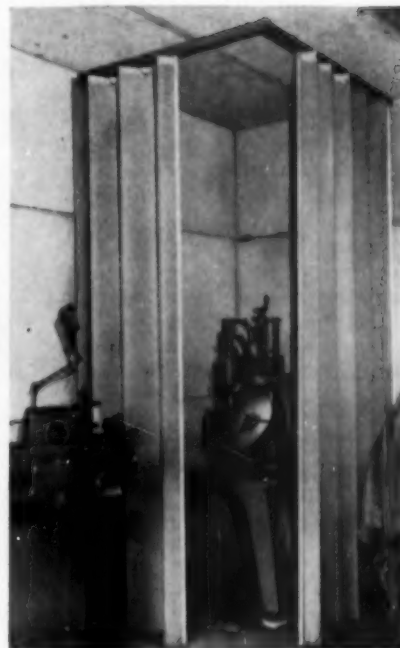
It is then coupled with a hand- or power-operated hydrostatic pump with a protective shield placed in front of it to safeguard the person conducting the test. Pressure is then applied at a rate of rise to reach 300 psi. in approximately one minute.

A careful examination of the extinguisher is made while this pressure is maintained for one minute.

Should any defects show up, such as leakage, distortion of shell, or other signs of weakness, the extinguisher should be returned to the manufacturer for repair or discarded. If no signs of weakness are detected, the extinguisher may be recharged and returned to service.

Following the test, the date, testing pressure, and name of person conducting the test are recorded on a suitable tag and attached to the extinguisher.

## "Estimated noise reduction approximately 80%" with TRANSWALL® installation



A plant in Akron had a noise problem . . . a pneumatic coining machine. Management called in an acoustical contractor who recommended an easy, effective and economical solution—an installation featuring Bemis TRANSWALL folding partitions.

The general manager of the firm writes:

"The installation reduced the irritating noise effect on both factory and office personnel. Estimated reduction approximately 80 percent. The material was purchased and installed by factory personnel. The job was accomplished at relatively low cost, the materials costing approximately \$180.00."

Improves plant and office economy!

Easy to install!

Low Cost!

TRANSWALL scores extraordinarily high in noise control and fire resistance. It is durable, long-lived, easy to operate, much lighter than comparable walls, and folds to approximately one-tenth of its open length. Due to the simplicity of its ingenious design, the track can be curved to a 24-inch radius if needed. Possibility of damage to TRANSWALL is negligible. *And costs are substantially lower than for any comparable folding walls or doors.*

MAIL  
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COUPON  
TODAY



TRANSWALL COATED PRODUCTS,  
Bemis Bro. Bag Co., 610-F So. 4th St., Minneapolis 15, Minn.  
Please send me complete information on TRANSWALL,  
including case histories of noise-safe installations.

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

## TRANSWALL Coated Products

BEMIS BRO.  
BAG CO.

## Instruments Record Level Of Air Pollutants

WHILE SPOT CHECKS on concentration of air pollutants provide useful information, recording instruments have the advantage of recording more data, especially on cyclic variations. Also, they can operate unattended for long periods relieving technical personnel for other duties.

For these reasons, the American Society for Testing Materials

Committee D-22 on Methods of Atmospheric Sampling and Analysis at its meetings February 4-5, during ASTM Committee Week in Philadelphia, concentrated much of its effort on development of methods for continuous recording of air pollutants.

The committee approved an alternate method for continuous recording of sulfur dioxide known as the electrolysis method to be added to the conductivity method already published as tentative

(ASTM Method D 1355). This will be submitted to the Society for adoption at the annual meeting in June. A method for continuous recording of fluorides in the atmosphere is under intensive study and progress toward developing a tentative method was reported.

Adding to its previously published recommended practice for planning the sampling of the atmosphere (D 1357), the committee is preparing specific sampling methods employing dust fall jar, impingers, and directional dust fall collectors. The latter device will be especially useful in locating sources of pollution.

## TO INHIBIT DERMATITIS

AND OTHER SKIN  
AILMENTS



A  
MUST

in every shop  
wash room and  
on-the-job locations

Foreign soils disappear and skin ailments and dermatitis are inhibited when you use VI-LAN, the remarkable skin cleanser—powered with Actamer, product of Monsanto Chemical Co. to reduce skin bacteria as much as 97%.

VI-LAN does what soaps or powders can not do. It cleanses and disinfects hands, face and body against skin contaminations. Used WITH OR WITHOUT WATER. It removes greases, oils, paints, tars, acids, printing inks, asphalt, pipe dope, rubber, gasket cement, etc., and protects you against lost man hours and annoying compensation claims. VI-LAN contains lanolin to restore natural skin qualities.

For convenient filling of dispensers VI-LAN comes to you in polyethylene bags, thru which you may dispense as much as is needed without waste.



Write for  
descriptive folder

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**enterprises, inc.**

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Louisville 3, Kentucky

## COMING EVENTS



in the  
safety field

### Apr. 2-4, Pittsburgh, Pa.

Annual Engineering Conference (Penn-Sheraton Hotel). Harry H. Brainerd, executive manager, Western Pennsylvania Safety Council, 605 Park Bldg., Pittsburgh 22, Pa.

### Apr. 3-4, Indianapolis, Ind.

Tenth Central Indiana Safety Conference and Exhibit (Claypool Hotel). Jack E. Gunnell, director, Indianapolis Safety Council, Indianapolis Chamber of Commerce, 320 N. Meridian St., Indianapolis 11, Ind.

### Apr. 3-5, Gainesville, Fla.

Fourth Annual Conference on Accident Prevention (University of Florida). Donald B. Wilcox, conference coordinator, College of Engineering, University of Florida, Gainesville, Fla.

### Apr. 8-9, Stockton, Calif.

First Annual Central California Safety Conference and Exhibits. Raymond A. Norwood, executive secretary, San Joaquin County Safety Council, Inc., City Hall, Stockton 2, Calif.

### Apr. 8-9, Toronto, Ont.

Industrial Accident Prevention Association's Annual Convention



(Royal York Hotel). R. G. D. Anderson, general manager, IAPA, 90 Harbour St., Toronto 1, Ont.

**Apr. 9-11, Columbus, Ohio**

The 27th All Ohio Safety Congress and Exhibit (Deshler Hilton Hotel). A. W. Moon, congress manager, Room 611, Ohio Departments Bldg., Columbus 15, Ohio.

**Apr. 23-25, Kansas City, Mo.**

Central States Safety Congress (Hotel President). George M. Burns, director, Kansas City Safety Council, 419 Dwight Bldg., Kansas City 5, Mo.

**Apr. 23-25, Grand Rapids, Mich.**

Twenty-seventh Annual Michigan Safety Conference (Pantlind Hotel and Civic Auditorium). Norb Hildebrand, Highway Traffic Safety Center, Michigan State University, East Lansing, Mich.

**Apr. 25, La Crosse, Wis.**

Southwest Wisconsin Regional Safety Conference, Oscar Wall-schlaeger, Electric Auto-Lite Co., La Crosse, Wis.

**Apr. 29-May 1, Syracuse, N. Y.**

Fifth Biennial Central New York Safety Conference and Exposition (Hotel Syracuse). Newell C. Townsend, administrative secretary, 351 S. Warren St., Syracuse 2, N. Y.

**May 6-8, Allentown, Bethlehem, Easton, Pa.**

Thirtieth Annual Eastern Pennsylvania Safety Conference. Harold A. Seward, secretary-treasurer, Lehigh Valley Safety Council, 602 E. Third St., Bethlehem, Pa.

**May 8-9, Niagara Falls, N. Y.**

Seventeenth Western New York Safety Conference, in cooperation with the American Society of Safety Engineers (Niagara Hotel). Patsy E. Gismondi, executive secretary, 1436 Delaware Ave., Buffalo 9, N. Y.

**May 9-10, Baltimore, Md.**

Annual Governor's Safety-Health Conference and Exhibit (Lord Baltimore Hotel). Joseph A. Haller, executive chairman, Safety Conference, Department of Labor and Industry, State of Maryland, 12 E. Mulberry St., Baltimore 2, Md.

**May 9-11, Winston-Salem, N. C.**

Twenty-seventh Annual North Carolina State-wide Industrial Safety Conference (Robert E. Lee Hotel). H. S. Baucom, director of safety, North Carolina Industrial Commission, Raleigh, N. C.

**May 15-16, Oklahoma City**

Ninth Annual Oklahoma Safety Conference (Skirvin Hotel). Bob Eastman, manager, Oklahoma Safety Council, 1600 N. W. 23rd, Oklahoma City, 6.

**May 16, Lake Delton, Wis.**

Rock River Valley Safety Conference. Allen Paschen, Northern Engineering Co., Baraboo, Wis.

**May 20-24, Los Angeles**

Sixty-first Annual Meeting of the National Fire Protection Association (Hotel Statler). Percy Bugbee, general manager, NFPA, 60 Battery-march St., Boston 10.

**May 23, West Allis, Wis.**

Southeast Lakeshore Safety Conference. Dick Lutz, Falk Corp., 3027 W. Canal St., Milwaukee 8.

**May 23-24, Duluth, Minn.**

Thirty-third Annual Conference of the Lake Superior Mines Safety Council (Hotel Duluth). Allen D. Look, secretary, 329 Federal Bldg., Duluth 2, Minn.

**June 4-5, New Haven, Conn.**

Twelfth Annual Connecticut Safety Society Conference (Jewish Center Bldg.). Dennis J. Hickey, manager, Waterbury Manufacturing Co., Waterbury, Conn.

—Turn page

# CAUSE for ALARM

Every industry encounters emergencies. There is no quicker way to transmit a warning than by the use of a horn, bell, or siren.

Many "stand-by" warning signals can be used for standard dismissal or for summoning Key personnel.

Small departments or whole industries can save time and money and promote safety through the proper use of signals for only a small cost.

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32 HORN



BELL



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**SIGNAL**

**Corporation**

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**June 6, Chippewa Falls, Wis.**

Northwest Regional Safety Conference. C. R. Johnston, Cornell Paperboard Products Co., Cornell, Wis.

**June 11, Stevens Point, Wis.**

Wisconsin River Valley Safety Conference. Victor J. Bukolt, Lullaby Furniture Corp., Stevens Point, Wis.

**June 13, Neenah-Menasha, Wis.**

Fox River Valley and Lakeshore Safety Conference. Howard Aderhold, Marathon Corp., Menasha, Wis.

**Sept. 12-13, York Harbor, Maine**

Thirtieth Annual Maine State

Safety Conference (Marshall House). Arthur F. Minchin, secretary, Department of Labor and Industry, State House, Augusta, Maine.

**Sept. 17-19, Cleveland, Ohio**

Nineteenth Annual Ohio State Safety Conference (Hotel Carter). H. G. J. Hayes, secretary-treasurer, Suite 514 - 2073 E. 9th St., Cleveland 15, Ohio.

**Sept. 23-26, Montreal, Canada**

Annual Meeting of the American Transit Association (Sheraton Mt. Royal Hotel). Arthur W. Baker, general secretary, 292 Madison Ave., New York 17.

**Oct. 16-17, Chicago**

Second Annual Sanitation Maintenance Show and Conference (Navy Pier). Orkin Expositions Management, 19 W. 44th St., New York 36.

**Oct. 21-25, Chicago**

Forty-fifth National Safety Congress and Exposition (Conrad Hilton Hotel). R. L. Forney, secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11.

**Nov. 13-15, San Francisco**

National Conference on Standards (St. Francis Hotel). Cyril Ainsworth, technical director, American Standards Assn., 70 E. 40th St., New York 17.

**Sectional Executive Committee Meetings, NSC**

**Apr. 3, Yakima, Wash.**

Wood Products Section, Chinook Hotel.

**Apr. 4, Pittsburgh, Pa.**

Metals Section.

**Apr. 11-12, Fort Worth, Tex.**

Food Section, Western Hills Hotel, 10:00 a.m.

**Apr. 15-17, Toronto, Ont.**

Pulp and Paper Section.

**Apr. 25-26, Raleigh, N. C.**

Public Utilities Section.

**Apr. 29-30, Chicago**

Trades and Services Section, Sheraton Hotel, 6:30 p.m.

**Apr. 30, Chicago**

Aeronautical Industries Section.

**May 8, New York**

Chemical Section, Sheraton-McAlpin Hotel.

**May 12, Kansas City, Mo.**

Petroleum Section, President Hotel.

**May 23-24, Lockport, N. Y.**

Automotive and Machine Shop Section.

**May 23-24, Cleveland, Ohio.**

Power Press and Forging Section, Hotel Carter.

**May 23-24, Cleveland, Ohio.**

Printing and Publishing Section.

**June 3, New Orleans**

Railroad Section, Roosevelt Hotel, 1:30 p.m.

**June 4, Marinette, Wis.**

Air Transport Section.

**June 7, Richmond, Va.**

Fertilizer Section.

**June 14, Carlisle, Pa.**

Rubber Section.

When it comes to gossip, it isn't hard to make a mountain out of a molehill—just add a little dirt.



**DANGER! DANGER! DANGER! DANGER!**

**CLEAN PARTS**  
AUTOMOTIVE & INDUSTRIAL  
**3 WAYS!**

1. Continuous Flow Hose
2. Air Agitated Soaking Tank
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Adapted for Critical Cleaning of Automatic Transmissions and Power Steering Units

A continuous flow pump strains, filters and ejects abrasive foreign material and returns clean Kleeer-Flo Cleaning Fluid through the semi-rigid hose to the upper soaking tank.

Fire hazard is reduced by a quick action fusible link in self-closing cover. Efficient patented electric pump is driven by a fan-cooled brushless, sparkless motor.

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# a new safety incentive

GREEN



CROSS

# Ball Point Pen



A high quality, low cost safety reminder — a handsome, useful working tool that bears the Green Cross, recognized symbol of safety.

Green Cross Ball Point Pens are long lived, valued awards that will be used month after month, and displayed with pride by every owner. They are especially made for the National Safety Council by a leading manufacturer of writing instruments. Tops in quality, appearance and performance... just a touch produces a smooth-flowing, even line that's free of smudges or scratches. The pen's push-button action rotates the point, minimizing wear and providing longer writing life with each cartridge. Green Cross Pens are everything that anyone could want — everything you could ask for as an interest-building safety incentive!

- Award Green Cross Pens to individuals or departments for safety achievement.
- Give them as long-lasting reminders of safety meetings.
- Give them as rewards for safety suggestions.
- Give them at meetings and conventions as good-will advertising.



All pens have Green Cross safety emblem on chrome-plated clip, retractable point, use standard refill cartridge. Your company name or special safety message can be imprinted on barrel. See other side for color choices, imprint information and prices.

**Standard Model** — Push-button action, chrome clip and collar. Available in a rainbow of color combinations for cap and barrel. (See reverse side.)

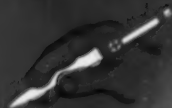


**Standard Presentation Case** — Sparkling acetate case with bright red plastic end caps. Available in your choice of one standard or deluxe pen with two extra cartridge refills.

**Deluxe Model** — Distinguished combination of milled chrome cap, ivory barrel. Choice of barrel color (see reverse side) on order of 50 or more. Chrome clip, push-button action. Parks presentation case included.

A COVETED BADGE OF SAFETY

A USEFUL WORKING TOOL



## color choices

**Standard Models** — Black, blue, dark green, light green, white, yellow, ivory, or red barrels. Caps available in all colors named above except ivory. Pens may be ordered in two-tone combinations of these colors or both cap and barrel same color.

**Deluxe Models**—Black, blue, dark green, light green, white, yellow, ivory or red barrels. All caps milled chrome.

*Colors other than green and ivory available only on orders of 50 or more pens.*



## quantity prices

	1-9	10-49	50-99	100-249	250-499	500-999	1000-2499
Standard Model	\$ .75	\$ .63	\$ .58	\$ .49	\$ .48	\$ .47	\$ .46
Standard Model (in case with two refills)	\$1.10	\$ .95	\$ .89	\$ .80	\$ .78	\$ .77	\$ .76
Deluxe Model	\$ .95	\$ .85	\$ .77	\$ .69	\$ .67	\$ .65	\$ .64
Deluxe Model (in case with two refills)	\$1.25	\$1.16	\$1.08	\$1.00	\$ .97	\$ .95	\$ .93

All prices subject to 10% discount to National Safety Council Members

Standard Model pens which can be shipped immediately from the Council's stockroom have ivory barrels and green caps with (a) slogan IT'S NOT THE RIGHT WAY IF IT ISN'T SAFE! or (b) no printing on barrel. Shipped prepaid.

Orders requiring special\*printing shipped in 3 to 4 weeks, FOB Factory. Minimum order — 50 pens with same imprint. Color choices available, as shown above. Shipments are bulk packed. Gift boxes available on orders at .02 each. Be sure to specify if gift boxes are desired.

\*Note — The slogan "IT'S NOT THE RIGHT WAY IF IT ISN'T SAFE" is considered a special imprint when requested for any barrel color other than ivory.

## Imprinting

Printing limited to 5 lines of copy. Special cuts for printing will be made at a cost of \$5 to \$7. Submit proof for exact quotation. The factory has many national trademarks which may be used without cost. On orders requiring special printing, the factory reserves the right to ship over or under quantity ordered in any amount not to exceed 5% of the order.



# NATIONAL SAFETY COUNCIL

425 NORTH MICHIGAN AVENUE  
CHICAGO 11, ILLINOIS



## Complete New Code for Abrasive Wheels

A REVISED EDITION of the 1947 Safety Code for *The Use, Care and Protection of Abrasive Wheels* has been approved by the American Standards Association. Revision was made under sponsorship of the International Association of Governmental Labor Officials and the Grinding Wheel Institute.

The new abrasive-wheel safety code represents a major revision of its 1947 counterpart. Some of its major changes:

**Size.** The new code measures a standard 8½ x 11 in. to facilitate binding and filing.

**Format.** Most striking change in the new code is its unique two-column format. Code regulation material appears in the left-hand column on each page and is printed in distinctive bold-face type. Drawings and halftones which are part of the code are designated as "figures." The right-hand column explains, simply, the extent of the regulations. Drawings and

halftones in this column are identified as "illustrations." The new, two-column format makes the code easier to use and code regulations more readily understood.

Changes in content, including these, were made:

—Section 1 was rearranged to facilitate location of material. Definitions were added for depressed center wheels, reinforced wheels and revolving cup guards.

—Table 1 was revised and expanded to make it more useful to the machine designer.

—For the first time, information is contained on the popular "revolving cup guard" used on portable grinding machines.

—The new Table 10 contains information necessary for fabrication of a drawn-steel guard for portable grinders.

—"Speed" was rearranged and new items added. The old speed table was broken down into two tables, one for "standard maximum speeds" and another separate table for "special maximum speeds." Maximum speeds were

established for two new classes of wheels, the "reinforced" and "depressed center" types. Conditions under which grinding wheels may be run at high speeds were clarified and strengthened.

—"General Operating Rules" was expanded. A discussion of the steps to be taken by the wheel user after an accidental wheel breakage was added in the explanatory column. Such information should aid materially in eliminating recurrences of grinding-wheel breakages.

—Section 10's "Mounted Wheels" was revised to facilitate the user's correct application of this class of product. The old "critical speed" tables were replaced by easy-to-use "maximum speeds" tables.

*A battered motorist slowly came to. "Where am I?" he asked.*

*"Take it easy, sir," said the nurse, "you're in 114."*

*Still doubtful, the motorist queried her: "Room or cell?"*



## Maximum SAFETY plus SAVINGS

1. Faster hoisting due to non-spinning loads.
2. Faster load placement due to easy load turning.
3. Faster rigging due to elimination of cranky wire rope performance.
4. Elimination of twists and kinks means longer wire rope life.
5. Safer load placements due to non-spinning loads.

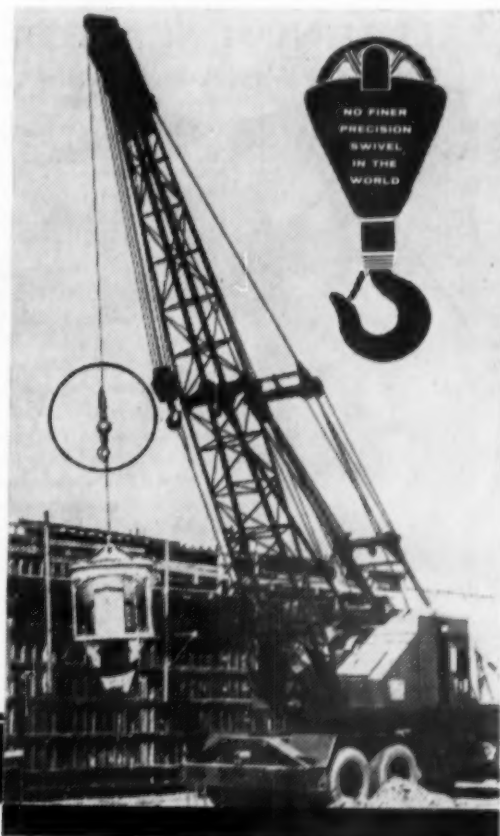
24 standard types available from  
¼ ton to 250 ton working load

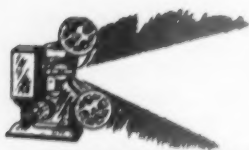


GENERAL MACHINE & WELDING WORKS inc.  
1100 East Second St., Pomona, Calif.

P. O. BOX 938

DEPT. N. 5.





## FILM NEWS

By Nancy Lou Blitzen, Public Information Department, NSC

### Safety Shoes Save the Day

Two recent films on safety shoes are now available for general distribution from their sponsors, both of which manufacture the item involved.

*Margin of Safety* was produced by Kling Film Productions for International Shoe Company. It is a black and white motion picture.

For about 22 minutes, the production tells the story of a foreman who is up for promotion. He is warned that if he wants the new job he'd better step up his safety program and get his men to wear safety shoes. However,

because he isn't convinced that safety shoes are necessary, about two-thirds of the picture deals with his investigation of safety shoes—their usefulness, availability, style, type, etc. This allows for a little advertising for the sponsor's product in a scene where the foreman listens to a sales talk as he is fitted for safety shoes.

After he gets his shoes, the story gets a bit involved and later the shoes save his toes in an accident. He's finally sold on them and goes out to convince his men that safety shoes are a necessity. Naturally, he also gets the promotion.

The use of the sponsor's prod-

uct and box in the selling sequence may limit the usefulness of this production.

Prints are available for loan and purchase from Hy-Test Safety Shoe Div., International Shoe Co., 1509 Washington Ave., St. Louis 3, Mo.

The other shoe film, *Mischief Afoot*, was produced by Victor Kayfetz Productions, Inc., for Lehigh Safety Shoe Co.

The production runs 22½ minutes and is in color. It combines live action with some descriptive animation. The plot is very amusing, if a bit farfetched, and the reasons for wearing safety shoes sometimes gets lost in the shuffle. Again, some advertising of the sponsor's product gets slipped in during a "selling" sequence.

Briefly, the story is about two friends, one named Burpo, who work together. When Burpo meets his friend's sister, he's left in such a daze that he drops a box on his friend's foot—which is protected by a safety shoe, of course. His friend discovers that Burpo

## ALUMINUM SCAFFOLDS

by The Patent Scaffolding Co., Inc.



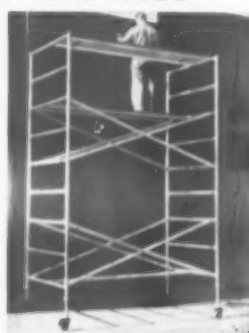
### SECTIONAL TOWERS

- Lightweight
- Easy rolling
- Adjustable heights
- Big working platforms

Safe, easy-to-erect frame-type Sectional Scaffolds designed for overhead repairs, painting, cleaning, and all-around maintenance work. Each section is assembled from end frames, platform frames, braces, stairways, plywood platforms, and casters. Hinged pin locks frames together. When height exceeds 18', four outriggers (shown) give added stability by increasing base dimensions from 4'6" x 6' to 10' x 10'. Approved by U.L. Write for Bulletin AS-3. Also U.L. approved "Fold-A-Way"® Scaffolds—one-piece sections. Bulletin ASF-1.

### 4'6"-WIDE LADDER SCAFFOLDS

Large platform areas—with two available working levels—make this ladder scaffold ideal for plant maintenance, painting, and construction work. 5" rubber casters provide easy mobility when unlocked . . . perfect stability when locked. Base section 6'7" high. Height increases by adding 5'4" and 4' ladder units and by using 24" leg adjustment. Easily attached outriggers give extra support. Write for Bulletin AS-7.



### 29"-WIDE LADDER SCAFFOLD

An extremely compact unit containing same quality features as 4'6"-wide scaffolds. Ideal for light duty maintenance and painting in narrow hallways and aisles. Passes right through standard 30" doorway on easy-rolling 5" rubber casters. Diagonal braces give platform spans of 6', 8', or 10'. When dismantled, parts lie flat and take little storage space. Approved by U.L. Write for Bulletin AS-7.

FOR GREATER SAFETY...EFFICIENCY...ECONOMY



**THE PATENT SCAFFOLDING CO., Inc.**

38-21 12th Street Dept. IM, Long Island City 1, N. Y.  
6931 Stanford Ave., Los Angeles 1, Calif.  
Branches in all principal cities

doesn't wear them and sends him out to get a pair ("selling" sequence).

Then Burpo has a date with the girl, she likes him, all goes well. His friend then meets the sister's girl friend and gets so dazed he runs a truck over Burpo's foot. Nothing happens because Burpo is wearing safety shoes. Burpo gets the girl, and his friend looks like he'll get his, too, and everything ends happily.

Prints can be obtained on loan from Lehigh Safety Shoe Co., Emmaus, Pa.

### Pole Climbing Methods and Equipment

In 1955 the Southwestern Bell Telephone Co. sponsored an in-plant training film entitled "Safe Pole Climbing Training." It was produced by the Texas Industrial Film Co.

The film is now available on loan from local Bell Telephone Co. offices across the country.



"Watch that match. Do you want the job to quit you?"

The film runs 25 minutes and is available in either black and white or color. It has been cleared for use on TV.

It is an extremely detailed instruction film on the technique of pole climbing. Since it shows a trainee receiving the instruction, it would make an excellent indoctrination film. Every conceivable

detail and procedure is covered, such as use of safety belt, putting on climbers and use of gaffs (including some exceptional sequences on use of gaffs from ground level practice to actual climbing up and down pole), checking ground for fall hazards and other dangers, etc.

The instructions are thorough and repetitious, but move fast enough to hold the attention of the viewer during the entire course of action.

A sequel to this film, "Safe Pole Climbing Equipment," was produced last year. It is a 27-minute color production dealing with care, maintenance and use of climbing equipment. It also lightly covers protective equipment and proper clothing. Detailed and rather slow-moving instruction is given on types and fit of body belts, safety straps, and climbers. How to keep these items in good and safe condition is stressed.

Much footage is given to deter-

NIGHT

# EXTRA PROTECTION

NO 2424

against FIRE THEFT · SABOTAGE

## In the silence of the night

the watchman makes *his* rounds while the hands on his CHICAGO Watchclock make *their* rounds.

In the morning, there is a permanent dial-record of exactly where the watchman was during each hour...in the silence of the night.

The tamperproof CHICAGO Watchclock system is approved by both THE UNDERWRITERS' LABORATORIES and by THE FACTORY MUTUAL'S LABORATORIES. It gives extra protection against fire, theft and sabotage.

# CHICAGO WATCHCLOCK

The first—and still the first

Quickly pays for itself...  
**REDUCES INSURANCE RATES**



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## CHICAGO WATCHCLOCK

DIV. GREAT LAKES INDUSTRIES, INC.

1524 S. WABASH AVE., CHICAGO 5, ILL.

OFFICES IN PRINCIPAL CITIES

STOP

don't paint  
that sign...

there are  
over 2,000 stock wordings  
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**Ready  
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**SIGNS  
for SAFETY**

in METAL  
PLASTICS  
and the new  
NEW  
self-adhering  
READI-STIK

**-NO-  
SMOKING**

**THREAT  
FEDS  
DAYS  
WITHOUT  
A LOST TIME  
ACCIDENT**

**KEEP  
OUT**

**THE BEST PREVIOUS  
RECORD WAS  
DAYS  
DO YOUR PART  
HELP MAKE  
NEW RECORD**

**CAUTION**

**WEAR GOGGLES  
WHEN USING  
THIS MACHINE**

**DANGER  
HIGH  
VOLTAGE**

Join the line of READY MADE clients  
in industry—at all levels—who have  
discovered that "time is money"—  
that READY MADE Signs for Safety  
have been selling ACCIDENT PRE-  
VENTION... GREATER EFFICIENCY  
with even GREATER ECONOMY since  
1861...

Don't paint that sign—just fill-in and  
sign the coupon below, now!



**Ready  
Made**

**SIGNS  
for SAFETY**

**READY MADE SIGN CO., INC.**

*signs for industry since 1861*

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**SPECIAL SIGNS TO ORDER**

at extremely low, low "stock" prices.

Send specifications for a fast quotation.

**READY MADE SIGN CO., INC.,**

**DEPT. NSN-47**

115 Worth Street, New York 13, N. Y.

Yes! Send us:

☐ Current Ready Made Catalog

☐ Place our name on your list for your

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Please send further information on:

☐ Safety & Accident Prevention

☐ Traffic

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☐ Special signs to order

(copy enclosed for quotation)

☐ Other

Name \_\_\_\_\_ Title \_\_\_\_\_

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City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

mining proper size, shape, and  
sharpness of gaffs and how to keep  
them in condition (shaping and  
sharpening).

This film is also available from  
local Bell Telephone Co. offices  
for loan. It was produced by the  
Texas Industrial Film Co.

## The President's Medal

*Awards made by the National  
Safety Council for successful ap-  
plication of artificial respiration*

NICHOLAS W. SCHMIDT, installer,  
New York Telephone Co., Bronx,  
N. Y.—drowning. Certificate of  
Assistance to JOHN J. McKENNA.

R. W. MORRISON, cementer, Hal-  
liburton Oil Well Cementing Co.,  
Pampa, Tex.—gas asphyxiation.

T. E. MORRISON, pumper, The  
Texas Co., Merkel, Tex.—sus-  
pended respiration due to injuries  
received in auto accident.

JAMES R. DEWBERRY, foreman,  
Reynolds Metals Co., Florence,  
Ala.—drowning.

S. A. HUNTER, fire and safety  
inspector, Canadian Chemical Co.,  
Edmonton, Alberta—drowning.

DELTON J. CHADEK, line fore-  
man class A, Wisconsin Public  
Service Co., Minocqua, Wis.—  
drowning.

DAVID MELVIN PEMBRIDGE, as-  
sistant master mechanic, Union  
Carbide Nuclear Co., Rifle, Colo.—  
electric shock.

ELDON A. NIGG, plant methods  
supervisor, Michigan Bell Tele-  
phone Co., Wolverine, Mich.—  
drowning.

EWALD ZERBE, driller, General  
Petroleum of Canada Limited,  
Calgary, Alba.—electric shock.

FRANK WAGNER, JR., head sec-  
tion clerk, Brooklyn Union Gas  
Co., Bayside, Long Island, N. Y.—  
drowning.

One of the great mysteries of  
life is how the boy who wasn't  
good enough to marry the daugh-  
ter can be the father of the smart-  
est grandchild in the world.

**MSCO**

*Specialists  
in first aid*

Medical Supply Company  
concentrates its entire efforts on the  
manufacture and distribution  
of first aid equipment and supplies for  
the field operations of industry.

When you buy MSCO,  
you buy superior quality products  
resulting from long, practical  
experience of the world's largest  
exclusive manufacturer  
of unit-type first aid.



a member of  
the Long John family

The longest 1-inch adhesive  
bandage on the market... a full  
3½ inches to provide the necessary  
¼-inch overlap for proper coverage  
and secure holding on workmen's  
fingers. Large six-layer all-gauze  
pad. A better bandage throughout.

**Medical Supply Company**  
Rockford, Ill. • In Canada, it's Safety Supply Co.



# For a More Successful Poster Program



JUMBO POSTER FOR JUNE 1957

The Jumbo poster, issued monthly, is designed for outdoor use and is available to members on annual subscription but is not stocked. Its actual size is 9' 11" by 11' 8".

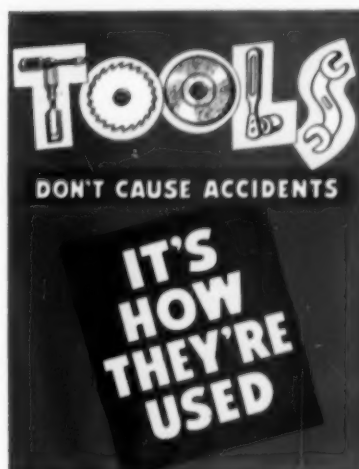
## SAFETY BANNER FOR JUNE, 1957

Here is the attention-getting, monthly cloth banner. Available in two types—indoor and outdoor—both are identical in size (10 feet long by 40 inches high), have the same general message and multi-color design. Indoor type is of sturdy drill with grommets for easy hanging, while the outdoor banner is of extra heavy drill, with wind vents, and has strong stitched-in rope for durability.

**P**OSTER program aids miniaturized on this and the following pages are **NEW**—shown here for the first time. Those illustrated in one color are actually printed in two or more colors.

Also, be sure to refer to the new 1957 Directory of Occupational Posters which contains an excellent selection of 756 posters on a great variety of subjects.

Copies of the new Directory are available at 60 cents each.



GRAPHICAL SAFETY COUNCIL

1023-A

8 1/2 x 11 1/2

This new four color poster is illustrative of the 72 four color posters shown in the 1957 Poster Directory.



NATIONAL SAFETY COUNCIL

Electrotypes of poster miniatures on this page are not available, nor can payroll inserts be supplied.

Posters below are printed in two or more colors  
(Available only in sizes indicated)



Electrotypes of payroll inserts can be furnished in all poster illustrations shown above.

Posters below are printed in two or more colors  
(Available only in sizes indicated)



PRINTED IN U.S.A.  
© NATIONAL SAFETY COUNCIL  
0907-A 8½x11½



PRINTED IN U.S.A.  
© NATIONAL SAFETY COUNCIL  
1016-A 8½x11½



PRINTED IN U.S.A.  
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0922-B 17x23



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T-1031-C 25x38  
T-1032-A 8½x11½



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V-1028-A 8½x11½



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## For Every Safety Need

Wheeler makes a complete line of safety clothing to meet almost any conceivable requirement. Our catalog lists 675 standard items. We also can handle the design and production of custom items to meet specific needs. Contact us today for all your safety needs!

### COMPLETE LINE OF FIRE BLANKETS



Now at Wheeler we are featuring a complete line of high grade fire blankets in many different sizes and materials to meet a wide variety of needs. These are all constructed of very fine materials and incorporate our high Wheeler standards for manufacture. No matter where you go, you can't buy better blankets or find a wider selection. Order from your safety jobber or write direct.

100010 Blanket, U. G. WW Asb. 6 x 6'.  
100011 Blanket, U. G. TW Asb. 6 x 6'.  
100012 Blanket, U. G. BW Asb. 6 x 6'.  
100013 Blanket, U. G. MW Asb. 6 x 6'.  
100014 Blanket, U. G. Alum. TW Asb. 6 x 6'.  
100015 Blanket, U. G. Alum. MW Asb. 6 x 6'.  
100120 Blanket, F. P. Duck 5 1/2 x 6 1/2'.  
100124 Blanket, F. P. Alum. Duck 5 1/2 x 6 1/2'.  
100135 Blanket, Fiberglass 5 1/2 x 6 1/2'.  
100140 Blanket, F. P. O. D. Jean 5 1/2 x 6 1/2'.  
100160 Blanket, F. P. W. 5 1/2 x 6 1/2'.  
100280 Blanket, Wool, 5 x 7'.

### ACCESSIBLE, FAST-ACTION FIRE BLANKET CASE

Metal case, strong hinge door. Fast, easy opening. Slanted bottom... blanket rolls out quickly. Inspection window... wall brackets... fold down handle... attractive green finish. With or without blanket.



WHEELER PROTECTIVE APPAREL, INC.



226 West Huron Street  
Chicago 10, Illinois

**WHEELER**

"More Safety Per Dollar"

## Safety Off the Job

—From page 62

responsibility and cannot be delegated.

Because safety involves human values, relevant to the ideological struggle going on in the world today, it is a way of life in this Christian democracy. Life for us is not a mere commodity, or a tool for the state to move around as a pawn on a chess board. Human life is the essential purpose around which our government and safety revolve. The safety program gives an affirmative answer to the question, "Am I my brother's keeper?"

Most of you drive automobiles. Think about this: On a recent show on Station WFAA-TV, Dallas, 60 pairs of empty shoes—mostly men's, but quite a number of women's—and eight pairs of tiny tots' shoes were displayed. Each represented a person killed in Dallas traffic last year.

The same thing is happening in every city in America. It could happen to you. Those tiny tot's shoes could be your child's shoes, or your grandchild's shoes. You can help prevent those empty shoes by helping to make the streets of your city safe, and by obeying all of the traffic regulations. Would not that be more pleasant than to supply a pair of empty shoes for a telecast show?

Remember this at all times—when in your car, drive so that your driver's license expires before you do. When you go home tonight look into the mirror, and you'll see the best-known safety device in the world: eyes, ears, mouth, hands, arms, feet, legs, plus a thinking apparatus on top of your shoulders for studying, planning, and directing.

Think it over!

## Symposium to Describe Nuclear Tests

NONDESTRUCTIVE tests developed in the field of nuclear energy will be the subject of a symposium to be held at the Morrison Hotel, Chicago, April 16-18. Information resulting from 15 years' research and development in testing applications in the nuclear field will be

**SAFE · CONVENIENT  
DURABLE · LOW COST**

## BALLYMORE SAFETY-STEP LADDERS



**FROM 1 TO 8  
STEPS**

Ladder rolls easily on large rubber ball-bearing casters

Casters retract under user's weight, legs grip floor firmly

Ballymore Safety-Step Ladders are available in a wide variety of sizes and models to meet working-height requirements up to 11'6". They are easily moved on rollers, but with no danger of "kick-out."

Made of all-welded 3/4" steel tubing for maximum strength. Rust-resistant aluminum coating gives a durable, attractive finish. Handrails, optional on 2- through 8-step models, help eliminate fear of accidents. Three treads available: expanded steel, grip steel lath, and rubber-clad steel plate.

Write for specific information to Ballymore Company, West Chester 17, Pa.

**BALLYMORE  
LADDERS**





presented for the benefit of those interested in applying nondestructive test methods to industrial applications.

Recently declassified papers to be presented will be divided into three categories:

1. Reactor materials, including the following: fuel, sheath or cladding, control and moderator material;
2. Completed fuel assemblies;
3. Miscellaneous.

Papers will be presented in the morning and afternoon sessions each day, and in the evenings of the first and second days there will be panel discussions in which the authors on the day's program will take part.

The symposium is being sponsored jointly by the American Institute of Chemical Engineers, The American Nuclear Society, the American Society for Testing Materials, and the Society for Non-Destructive Testing.

Chairman of the symposium is W. J. McGonnagle, Argonne National Laboratory, representing the Society for Non-Destructive Testing.

## Around the Compass

—From page 50

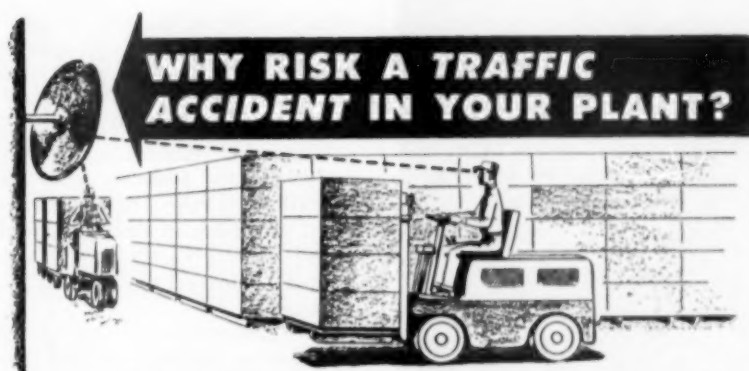
The Conference, which was held March 11 at Montgomery, was arranged under the leadership of General Chairman Hugh M. Comer, chairman of the board, Avondale Mills, Sylacauga.

And in Arizona, several top business leaders of the state met recently to hear T. S. Petersen, president, Standard Oil Co. of California, and representative of business on the President's Committee for Traffic Safety, discuss the need of citizen support for traffic safety. The meeting was called to plan further development of the Arizona Citizens' Traffic Safety Committee.

## New Memphis Safety Council

The new Memphis-Shelby County Safety Council recently opened its offices in Rooms 304-305 of the 81 Madison Building, Memphis, with Eugene D. Glaze as its executive manager.

Mr. Glaze comes to the new council from the local Red Cross



**KLEAR-VU SAFETY MIRRORS** are the answer to the dangerous blind corner problem in your plant or warehouse. They are also adaptable for outdoor use in your parking lot, loading dock area or other points where traffic converges.

Mounted at cross aisle intersections, entrances and exits at a height of 8 to 10 feet, Klear-Vu Safety Mirrors clearly reflect oncoming intersection traffic to both power truck operators and pedestrians.

Style	No.	Dimensions
Circular Convex Glass	120	12" dia.
Circular Convex Glass	180	18" dia.
Circular Convex Glass	240	24" dia.
Circular Convex Glass	300M.R.	30" dia.
Circular Convex Glass	360M.R.	36" dia.
Flat Glass Rectangular	918	9"x18"
Flat Glass Rectangular	1640	16"x24"

M.R. indicates metal rim

Available in either convex or flat glass styles, the mirrors are easily installed and quickly adjustable to any desired angle.

**LESTER L. BROSSARD CO.**

540 N. MICHIGAN AVE., CHICAGO 11, ILL.

Write for  
Bulletin.

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PREVENT the SPREAD of  
**DERMATITIS**

### ELIMINATES CONTAMINATION

of DL HANDI-CLEANER supply thereby preventing the spread of Dermatitis.

### HEXACHLOROPHENE and LANOLIN

in DL HANDI-CLEANER guards against infection keeping hands soft and healthy.

### SAVES COSTLY MAN HOURS

by reducing "clean-up" time. By actual test this dispenser delivers 4 cleanings for a penny.



**DL**  
**SAFELY REMOVES**  
GREASE • GRIME • CARBON  
LIPSTICK • PAINT • SHELLAC  
ASPHALT • RUBBER CEMENT  
GUM • TAR • PRINTERS INK  
ADHESIVES, ETC.

## ACCEPT NO SUBSTITUTE

**DL** *First and Finest for Over Twenty Years!*  
**HANDI-CLEANER... USE WITH OR WITHOUT WATER**

Made only by **BANITE CO.** Banite Bldg., Buffalo 4, N. Y.



## can help you REDUCE ACCIDENTS

You know the important part safety messages can play in your accident prevention program—particularly for the simple familiar cautions we are all so likely to overlook.

**If only you could get them read!**

### TWO-WAY PROTECTION

AJAX Cups can help . . . because they put their imprinted safety messages right in your worker's hand, several times a day, at just the moment he is relaxed, receptive, most likely to read.

Plus the fact that these crisp, clean AJAX Cups provide the most convenient, comfortable drinking water service, boost employee morale, and reduce the hazard of transmitted infections.



**AJAX® CUPS** — wedge-shaped, easy to hold, dispense open, ready to drink from; in 4, 6 and 7 oz. sizes, imprinted with assorted stock safety messages at no extra cost—or your own message to order.

**AERO® CUPS** — for those who prefer a flat-bottom cup; in 3, 4, 5 and 6 oz. sizes. Also with stock safety messages or your own message to order.

#### Get the full story—

ask your paper merchant or write us today for new folder giving full details about AJAX and AERO Cups and equipment.



**UNITED STATES  
ENVELOPE COMPANY**

**General Offices:**  
Springfield 2, Massachusetts  
15 Divisions from Coast to Coast

Chapter, where he held the post of safety director.

### William C. Kullick Heads Genesee Conference

William C. Kullick, safety director for the Rochester, N. Y., operations of the DuPont Company, has been elected president of the Genesee Valley Safety Conference, succeeding William J. Enders.

The Conference is a nonprofit corporation which conducts the regional meeting. It represents the supporting interest of the Rochester Safety Council, Genesee Valley Chapter, ASSE, and Management Council.

### Paul J. Fanning Becomes San Francisco President

Paul J. Fanning, director of personnel and safety for the city Public Utilities Commission, recently was elected president of the board of directors, San Francisco Chapter, National Safety Council. He succeeds Joseph J. Diviny, President of the Highway Drivers' Council of California.

Harry A. Lee, division manager of the Pacific Gas and Electric Co., was elected vice-president, and Arnold E. Archibald, board chairman of the San Francisco Federal Savings and Loan Association, was named treasurer.

### NSC District Representatives

Alton P. Bunderson, 6505 Fairfield St., Boise, Idaho. Phone: 4-4647. (Wash., Mont., Ore., Utah, Idaho)

James E. Civils, 811 E. John Wesley St., College Park, Ga. Phone: PO 7-9230. (Ala., Ky., Fla., Miss., Ga., S.C., Tenn.)

George E. Grotz, 130 Devonshire Rd., Fairfax, Wilmington 3, Del. Phone: OL 2-7345. (Del., N.C., Md., Va., N.J., W. Va., D.C.)

John C. Hall, National Safety Council, 703 Market St., Room 250, San Francisco 3. Phone: EX 2-0945. (Ariz., Nev., Calif.)

George W. Harris, National Safety Council Headquarters, 425 N. Michigan Ave., Chicago 11. Phone: WH 4-4800, ext. 361. (Ind.)

James D. Hill, 3276 Darvany Dr., P.O. Box 13361, Dallas, Tex. Phone: FL 1-6609. (Ark., La., Mo., Okla., Tex.)

Robert D. Hopper, 6348 Teller, Arvada, Colo. Phone: HA 4-1383. (Wyo., Colo., N.M., Neb., Kan.)

Norman A. Oltman, 253 Lexington Ave., Grand Rapids, Mich. (Mich., Ohio)

Edwin S. Smith, 32 Wedgewood Dr., Rochester 11, N.Y. Phone: GE 8-9056. (N.Y., Pa., Ohio)

Philip N. Streit, 504 S. 11th St., Adel, Iowa. Phone: 147LW. (Ill., Iowa, S.D., N.D.)

### Safety Library

—From page 12

"In This Disaster Plan Student Nurses are the Link Between the Patient and the Team." Vernon D. Seifert and Warren Gerber. *Modern Hospital*. Feb. 1957. p. 64-68.

### Mining

"Foot Ringworm in Coal Miners." J. C. Gentles and J. J. Holmes. *British Journal of Industrial Medicine*. Jan. 1957. p. 22-29.

"How Britain Controls Dust." William Boyle. *Coal Age*. Feb. 1957. p. 88-93.

"Safety in 1956." *Coal Age*. Feb. 1957. p. 70-71.

### Nurses

"How the Industrial Nurse Contributes to Accident Prevention." Louise Candland. *Nursing World*. Feb. 1957. p. 28-29.

## fully PROTECTED? all hands SAFE?



For employee protection and plant safety, GRANET industrial GLOVES give maximum wear per dollar. Neoprene, rubber or plastic coated, GRANET gloves are resistant to acids, alkalies, caustics, oils, wet or dry chemicals, abrasive materials, cutting or snagging.

GRANET gloves are made by a super-sensitive automatically controlled process which builds in quality and provides longer wear life. With this exclusive process, high grade industrial gloves are produced at competitive prices.

Shaped fingers and palms for worker comfort, GRANET industrial GLOVES are available full or palm coated and in knitwrist, band top or gauntlet styles. Stocked from coast to coast by industrial and safety distributors — write for prices and information and name of nearest distributor.

Wear-test a pair of GRANET gloves — write for samples on your company letterhead specifying material to be handled.

**GRANET**

**THE GRANET CORP.**

19 LORING DRIVE, FRAMINGHAM, MASS.



## SAFEGUARDS

*pay off...*

on increased safety  
and better production in  
the press room

- Better protection that's easy on the operator . . . the ram operated pullout guards the operator from all press repeats and from his own carelessness . . . but pulls **only** until he is safe. He can work faster, and in greater comfort!

- Actually can improve production . . . from use of foot trips and faster feeding.

- Versatile and compact . . . adapted to large or small presses. Strokes from 1 to 12 inches. Completely press-attached, requiring no floor space. Press may be inclined with no adjustment of guard. Pull out arms fold down flat when not in use. Simple, rugged, easily inspected.

- SAFEGUARD users report full satisfaction . . . from the many modern plants using SAFEGUARDS comes word of excellent acceptance by press operators . . . of increased operational speed . . . of praise from State Inspectors and Insurance Companies . . .

Your operators will be  
safer, do better with a  
SAFEGUARD.

**Safeguard  
Manufacturing Company**  
Transylvania Road,  
Woodbury, Conn.

### Pressure Vessels

"Safe Operations Through a Pressure Vessel Testing Program." S. M. MacCutcheon. *Industrial and Engineering Chemistry*. Feb. 1957. p. 89A-90A.

### Printing Industry

"Handling Solutions." *Modern Lithographing*. Feb. 1957. p. 49-57+.

"Safety in the Printing Industry." Michael Carey. *British Journal of Industrial Safety*. Winter 1956. p. 247-252.

### Purchasing

"Purchasing for Safety." Rex C. Beckstead. *Best's Insurance News—Fire and Casualty*. p. 65-66. Feb. 1957.

### Radiation

"New York State Copes With The Hazards of Radiation in Industry." *Industrial Bulletin*. Jan. 1957. p. 3-7.

### Safety Movement

"Progress and Problems in Industrial Safety." *Monthly Labor Review*. Dec. 1956. p. 1438-1444.

### Wood Working

"Safe Operation of Routers." E. Mottershead. *Wood Working Digest*. Feb. 1957. p. 62-63.

### ADDRESSES OF MAGAZINES MENTIONED

Readers are asked to send their requests for copies of magazine articles to the publishers, rather than to the NSC Library, which is unable to fill such requests.

*American Gas Association Monthly*, 420 Lexington Ave., New York 17.

*Best's Insurance News—Fire and Casualty*, Alfred M. Best Co., 75 Fulton St., New York 38.

*British Journal of Industrial Medicine*, British Medical Association House, Tavistock Square, London WC-1, England.

*British Journal of Industrial Safety*, Royal Society for the Prevention of Accidents, 52 Grosvenor Gardens, London SW-1, England.

*Coal Age*, McGraw-Hill Publishing Co., 330 W. 42nd St., New York 36.

*Commercial Car Journal*, Chilton Co., Chestnut & 56th Sts., Philadelphia 39.

*Industrial and Engineering Chemistry*, American Chemical Society, 1155 Seventeenth St., N. W., Washington 6, D. C.

*Industrial Bulletin*, New York State Department of Labor, 80 Center St., New York 13.

*Industrial Medicine and Surgery*, 605 N. Michigan Ave., Chicago 11.

*Modern Hospital*, 919 N. Michigan Ave., Chicago 11.

*Modern Lithography*, Industry Publications, Inc., P. O. Box 31, Caldwell, N. J.

*Monthly Labor Review*, U. S. Department of Labor, Washington 25, D. C.

*Nursing World*, 41 E. 42nd St., New York 17.

**Dockson GOGGLES**  
REAL PROTECTION—TRUE COMFORT—TOP VALUE

Write for complete catalog and name of your nearest distributor.

DOCKSON'S complete line of goggles offers the finest, scientifically designed protection at minimum cost. Their many outstanding features and unusual comfort have earned them top preference in industry.



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**ALL**  
THE IMPORTANT FEATURES FOUND  
**IN**  
MORE EXPENSIVE EQUIPMENT  
... NOW IN  
**ONE**  
"SINGLE UNIT" GAS MASK

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#1750

**JUNIOR  
GAS  
MASK**



Here is eye, face and lung protection in a high quality, low cost, lightweight gas mask.

Among its many features you'll find:

- No hose or harness—canister threads directly into face piece.
- Non-irritating rubber compound face piece with special "U" shape gives wearer snug fit.
- Built-in Intake Valve eliminates build up of CO<sub>2</sub> in face piece; plus patented exhalation valve.
- Light, compact all aluminum canister available for protection against: Organic Vapors, Acid Gases, Organic & Acid Ammonia.
- Each canister individually packaged in "moisture proof" tube.
- Complete gas mask packed in individual fibre carrying and storage case.

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Write for complete technical data  
and price information.

**PULMOSAN  
STOPS  
Accidents**

## Wire from Washington

—From page 6

Federal aid for highway construction where speed limits exceed 65 miles per hour on limited access highway, 60 miles per hour by day and 55 miles per hour by night on other highways.

H.R. 561 (Bennett) would direct the Secretary of Commerce to prescribe mandatory minimum safety standards for automobiles manufactured for use in interstate commerce. Among the features to be subject to such standards were speed capacity, safety padding, steering and other controls, bumpers and shock absorbing equipment, lights, brakes, and visibility.

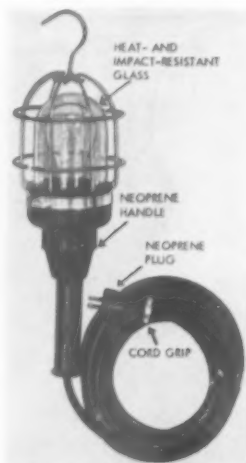
S. 598 (Capehart) would provide medals of honor for persons who perform heroic acts in preventing serious accidents on the highways or in saving lives endangered as a result of such accidents.

Among other bills claimed to be based on safety considerations are S. 963 (Neuberger) and H.R. 4862 (Wainwright) which would prohibit the use of billboards or other outdoor advertising display along the interstate highway system.

The Supreme Court of the United States, in a split decision with the Chief Justice and two other justices dissenting, upheld New Mexico's chemical blood test for alcohol. The action in the particular case, said the Court, was constitutional, but it warned that under some circumstances it might be ruled to be improper.

Justice Clark, for the majority, said, "The increasing slaughter on our highways, most of which should be avoidable, now reaches the astounding figures only heard of on the battlefield." (He cited National Safety Council figures.)

Against a claim of unconstitutionality, the Court ruled that "the interests of society in the scientific determination of intoxication, one of the great causes of the mortal hazards of the road," must prevail over the right of an individual to protection against slight invasions against his individual rights. The Court mentioned the "deterrent effect" of the availability of such chemical



No. 70 C & E Vaporproof  
Portable Lamp Guard  
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Since 1918, C & E safety electrical equipment has served many industries well. All C & E portable lamp guard handles, attachment plugs, sockets and connector bodies are made of high grade, oil-resistant Neoprene compound. We specialize in heavy duty rubber cord sets and extension lights.



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## FOR SAFETY SAKE

FOR SAFETY SAKE

specify  
**Safe-Hi**  
SHOCK ABSORBER



Safe, practical attachment for Life lines. Has N. Y. State approval. Cushions the jolt of a fall. Easily secured (no knots to tie), can be moved up or down, CANNOT be accidentally dislodged from rope.

Your safety equipment dealer will give you full information... or write to:

**ROSE MANUFACTURING CO.**

**Safe-Hi**  
DENVER

2700 W. Barbary Place



tests. The dissenting judges said that the value of the tests was "tainted by a violation of defendant's constitutional rights."

**Industrial Safety.** At the request of the Interstate Commerce Commission, S. 1386 (Magnusson) and H.R. 5123 (Harris) were introduced to amend the Safety Appliances Act so as to give the ICC authority to establish rules, standards, and instructions for the installation, inspection and repair of power or train brakes. The ICC made these recommendations because, in part, it found "a progressive deterioration of train brake inspection and maintenance practices."

The Bureau of Mines reported an increase of 27 deaths in coal mine accidents in 1956 over 1955; however, the rate per millions of tons of coal produced was the same in both years, 0.84.

S. 815 (Smith and Ives) would carry out the President's proposal for a program of grants-in-aid to the states for occupational safety. According to the U. S. Depart-

ment of Labor, "the resources of most state (labor) agencies have been totally incapable of carrying out the basic responsibility of the State in this field."

Among the most controversial areas of industrial safety in Washington is the problem of radiation safety standards. The chairman of the National Committee on Radiation Protection stated his view that uniform radiation protection laws are necessary throughout the nation. Organized labor, through the AFL-CIO, has urged the establishment of federal rather than state standards of safety in the atomic energy field.

The Atomic Energy Commission finalized its regulations establishing standards for the protection of atomic energy workers and the public against radiation hazards arising from activities which it licenses. "On the basis of present knowledge," said the AEC, "the standards provide an adequate margin of safety for exposed persons."

The AEC warned that its standards apply only to its licensed activities and not to other sources of radiation such as x-ray and radium. However, its standards were designed to take into account exposure from such other causes in establishing permissible limits. The Commission also noted that its standards were subject to change with the development of new knowledge and with "significant increase in the average exposure of the whole population to radiation."

AEC's semi-annual report of activities to the Congress laid special stress on safety factors in the nuclear industry and claimed that the radiation safety record of atomic operations in the past 13 years "is believed to be without parallel in industrial history." The AEC is finding vigorous labor opposition to the installation of a large atomic energy plant in the Detroit-Toledo area, on the alleged ground that it would create a radiation hazard to the people living in the general vicinity. The Commission is conducting an investigation of the case.

S. 1228, introduced by Senator Neuberger and eight other senators, would establish a National

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LANTERNS**  
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CATALOG NUMBER 569-M



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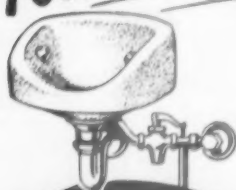
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Radiation Health Institute within the U. S. Public Health Service, as recommended by the National Academy of Sciences. This Institute would conduct research and studies on all phases of the impact of nuclear radiation on human health, safety and well being, and would develop a permanent record card form for voluntary recording of radiation exposure.

**Aviation.** As a result of a recent accident, intensified executive and legislative consideration was given to flight control over crowded metropolitan areas. The CAB issued an order that all civil and military flight tests must be conducted over sparsely settled areas, and promulgated other orders intended to reduce the chance of air collision and to improve air and ground safety. The CAB also revised its rules of practice in aircraft accident inquiries.

The President's special assistant on aviation indicated that he would submit a proposal for the creation of a new agency to direct the growth of the civilian and military air traffic system, and a 20-year program for aviation facilities.

The Senate Committee on Interstate and Foreign Commerce directed its aviation subcommittee to study aviation safety on a broad scale, and the subcommittee has held hearings.

H.R. 4275 (Harris) would cre-



"Wait, fellas! Don't leave me flat."

ate an Office of Civil Aviation Medicine within the CAA for the development of technical medical information essential to aviation safety. This office would consider, among other matters, aircraft design and the medical causes of accidents.

**Marine Safety.** A committee of three government agencies, the Federal Communications Commission, the Coast Guard and the Federal Maritime Administration, reported against a proposal (See "Wire," Sept. 1956) that automatic call selectors be installed in merchant ships, on the ground of impracticability.

The International Labor Organization has under consideration a code of occupational safety and health for dock workers.

S. 1454 (Kennedy) would amend the Longshoremen's and Harborworkers' Act so as to provide a system of safety rules, regulations and safety inspection and training for stevedoring.

**Home Safety.** Both the Senate and House Agriculture committees have begun hearings on a series of bills, including S. 1128 (a revised form of a bill supported by the U. S. Department of Agriculture last year) for the compulsory inspection of poultry and poultry products.

The Federal Trade Commission has warned that scare tactics, false claims and misrepresentations are being used to sell home fire alarm systems, and has brought proceedings against one alleged offender.

Active consideration is being given by the Public Health Service to the questionnaire upon which the Household Survey of its National Health Survey will be based. Plans call for start of field work in the spring of 1957.

**Government.** S. 816 (Smith and seven other senators) is designed to carry out the President's proposal to shift the financing of compensation payments to Federal employees injured in course of their employment from a single appropriation to the separate employing agencies. The U. S. Department of Labor stated, on this problem that "most (Federal) de-

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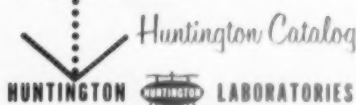
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partments and agencies have not developed sufficient concern with the problem to begin and continue effective safety programs."

S. 931 (Humphrey and 14 other senators) would create a Federal Safety Division in the U. S. Department of Labor for the direction and coordination of all safety educational programs and related loss-prevention procedures in the Federal government. This bill is designed to reduce Federal employee accident rates and the cost of such accidents, and is identical with S. 317 of the 84th Congress which was unanimously approved by the Senate in the closing days of the last session.

### Housekeeping

—From page 27

disruption of production. A great deal of housekeeping is made difficult because conditions are allowed to get out of hand over a period of time.

**Equipment and tools.** When installing equipment provisions should be made, wherever possible, to facilitate housekeeping. This is often a matter of location. A machine which is to produce a considerable amount of waste is located, for example, on an upper floor so that scrap can be dropped into a bin on the floor below. Or a machine can be installed near an outside wall so scrap can be directed outside the building.

In many instances floor area around the unit can be reserved for the spotting of material, installation of conveyors, necessary racks, bins, etc., to create a neat and orderly work station. In short, housekeeping is "built into" the layout.

A primary cause of poor housekeeping is faulty maintenance of equipment, which results in inefficient handling, leakage, breakage, and spillage. A simple example is a defective wheelbarrow used in handling loose material. Because of its battered condition it produces spillage or leakage of material on floors wherever it is used.

Leaking containers and pipes, broken-down bin walls, defective trucks, broken skids, and battered

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has all these outstanding  
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Floats the wearer in a vertical position, so that his head and shoulders are above water level.

Front pads of the vest raise up in the water to catch under the wearer's chin; back pad raises to support back of the head out of water.



2.  
The vest is equipped with a snap at the bottom front which is attached to the man's belt or belt loop, so that it cannot float off the wearer.



3.  
Fasteners and belt snap are attached to the vest with a plastic rod. If wearer becomes trapped under a barge, or between two objects, etc., and must be rid of the vest to escape, he merely pulls upward on a lace attached to the rod, which draws out the rod and completely disengages all fasteners, so the vest can be easily removed.



4.  
The vest is not bulky. Maximum thickness at any point is 1 1/4 inches. This lack of bulk gives the wearer greater freedom to move and work. It comes in one size that is easily adjustable by side straps to fit chest measurements from 30 to 56 in. inclusive. It's lightweight, too (34 oz.).



5.  
The buoyant material in the vest is of a closed cell expanded vinyl plastic, that is unaffected by most oils, acids, or perspiration and it is odorless. It will not sustain a flame.

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tote boxes similarly produce poor housekeeping conditions. Whenever unsatisfactory housekeeping conditions are encountered better maintenance should be considered as a means of improvement.

## Routine Housekeeping

Foremen should be responsible for their departments and each workman should be held accountable for the neatness of his individual machine, bench, or floor area. Miscellaneous rubbish should not be left on floors. Spilled oil, grease, and other liquids should be wiped up promptly. Milk and pop bottles should be placed in provided containers. Tools and supplies should be kept in an orderly manner.

Floors should be suitably maintained and cleaned regularly. Walking surfaces are a major source of falls and too much attention cannot be paid to them. Machines and other operations which throw or splash oils or other liquids should be corrected by relocation or by installing baffles, drip pans, screens, gutters or additional drains.

There should be a well-defined system of traffic regulations and definite practices for the loading and dumping of industrial hand and power trucks, skids, racks, or pallets on which material is moved. All vehicles should be parked, maintained, and operated according to definite regulations.

Adequate illumination not only adds to the attractiveness of working areas, workmanship, and increases safety, but it also discourages the accumulation of waste, scrap, and rubbish which would otherwise be hidden in dark corners. Windows and lighting fixtures should be cleaned regularly to insure maximum intensity of lighting available.

All parts of the plant premises outside the building should be kept neat and clean in such a manner that they will reflect or be consistent with inside conditions.

Large quantities of valuable waste and scrap, unused or obsolete equipment often accumulate in even a well-kept plant. A salvage or reclamation department is often established as a sound,

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## FOOT-TOE-LEG Protection by "Sankey"



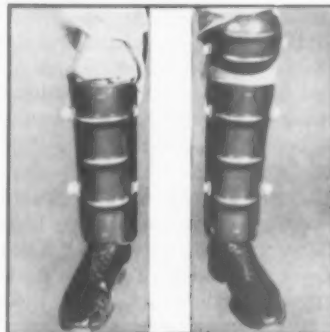
### "SANKEY" IMPROVED FOOT GUARD

The metal shield (above) is designed to furnish a maximum amount of protection to the entire front of the foot—not merely the toes alone, but also to the instep against hazards from falling, rolling or flying objects, or from accidental tool blows.

- Absolute freedom of leg motion, utmost protection and comfort come with the leg-contour shaped "Sankey" fibre shin guard (right).
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225 SIXTH ST.,—NSC ELLWOOD CITY, PA.



day-to-day method for collecting, grading, and sorting such materials. This not only improves housekeeping but also returns substantial salvage profits.

### Cleaning

**Air.** The air-borne dust, fumes, gases, and vapors result in poor housekeeping when allowed to settle or come in contact with parts of a structure, machines, or equipment. Adequate ventilation of workrooms to remove bacteria, odors, dusts, fumes, vapors, and gases not only eliminates a poor housekeeping condition, but also improves the comfort, health and efficiency of workers.

**Machines and equipment.** Certain types of dusts, fumes and vapors, if allowed to accumulate on machines and equipment, may result in damage or abnormal depreciation. Thus, elimination of such air-borne material is an important form of preventive maintenance.

Machines, conveyors, spray booths, tables, pails, trays, cookers, washers, and mixers which become dirty in the course of regular operations would be cleaned periodically.

**Snow and ice** should be cleared promptly from all outside walkways, steps, stairways, and any overhead areas where there is regular foot traffic. Snow and ice—and rain—often create poor housekeeping and hazardous conditions on thresholds and inside doorways, due to the tracking in of moisture. Such areas should



"I'm glad to see somebody around here is ambitious."

be covered with nonslip floor coverings or mopped and cleaned up while the weather condition lasts.

Pipefitters, electricians, machinists, painters, and all other maintenance employees should set the pace for good housekeeping. Continuously on the move as they are, from one department to another, their orderly and systematic methods of work should reflect all housekeeping cooperation from all maintenance department men who, in turn, should set the correct example in every way possible.

### Housekeeping for Management

Management should have a definite housekeeping program containing such provisions as:

1. A housekeeping policy should be set, promulgated and followed up with regular rigid inspections.

2. Management should provide the necessary planning of methods and facilities indispensable to good housekeeping.

3. The program should consist of continuous, day-in-and-day-out activity, not an annual three-day campaign.

4. Cooperation of supervisors should be required and stimulated simultaneously. Interdepartmental contests are helpful.

5. Employee cooperation should be obtained through all available educational methods. Each worker's enthusiasm should be stimulated so that he will develop pride in keeping his own working space clean, neat, and orderly.

6. Inspections may be made by an executive, a department head, an inspector appointed for the purpose, a safety committee, or a committee member. These people should conduct regular inspections and submit reports to management. It is often found desirable to rotate inspectors.

7. Foremen and other supervisors as well as employees should be encouraged to inspect their housekeeping continuously, and corrections should be made promptly, based on their findings.

### Institute Adds Approval Seal for Seat Belts

THE AUTOMOBILE Safety Belt Institute of Chicago will put its "seal of approval" on seat belts that meet standards recommended

by the Society of Automotive Engineers.

The move is reportedly an attempt to eliminate confusion regarding strength and proper installation of automobile seat belts.

"We believe this step will help protect car owners and reputable makers of safety equipment," an institute spokesman commented.

Most auto seat belts are manufactured according to specifications, but some "shoddy, unreli-

able" belts are being distributed. The institute's plan will enable ethical manufacturers to have their products tested by an independent laboratory and given a seal of approval if they meet recommended practices of assembly.

The oval-shaped seals—black and gold, 2 x 1½ in.—are available in both cloth and adhesive metal foil; they may be attached to auto seat belts.

Officials of the safety belt insti-

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E. H. Noise Reduction Panels have one surface of either perforated aluminum or hard-board and are well proportioned for average installations . . .

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AIR CONDITIONING NOISE PROBLEMS  
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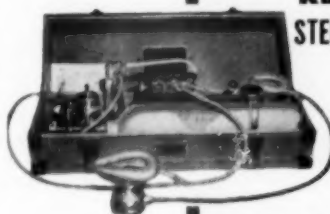
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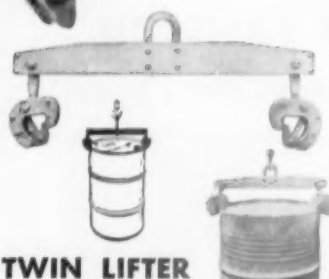
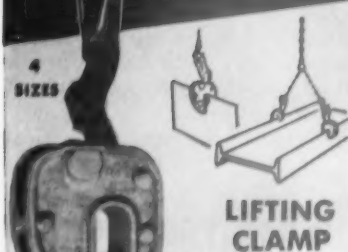
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tute, while emphasizing that the belts are no cure-all, noted that usage and tests indicate that use of the belts tends to prevent death and minimize injury in a large percentage of auto crashes.

"Since this can mean a substantial reduction in the death and injury toll... we believe there is a need for a reliable seal to identify belts" that meet specifications, officials concluded.

## Hand Protection

—From page 31

well above the wrists, leaving no gaps between glove and sleeve. Long, flaring gauntlets should be avoided unless they are equipped with locking devices to assure a snug fit about the wrists.

Long gloves are especially desirable when pouring acids and other corrosive chemicals from large to small containers. For such pouring operations, sleeves ordinarily should be worn outside the gauntlets. Rubber gloves with

extra long cuffs also provide protection by means of a heavy ridge near the top edge which, when turned back, forms a trough to catch liquids running down the wrist or forearm.

For meat packing and butchering operations, such as boning and cutting, wire mesh gloves are used. These should fit snugly, and the mesh should be fine enough to minimize the possibility of penetration.

Finger stalls provide protection for such operations as burring, grinding, buffing, sanding, assembly, and certain machine and punch press operations. Some are flexible and have porous woven elastic backs to fit any finger or thumb; others are rigid. Materials used are rubber, leather, plastics, duck, asbestos, and metal mesh.

Hand pads are often more satisfactory than gloves for protection against heat, abrasion, or splinters. They are obtainable in leather, asbestos, and twisted weave fabric and are heavier and less flexible than gloves.



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Pylox™ Gloves

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Thinner than surgical gloves for jobs requiring extreme finger sensitivity.

Wear all day in comfort. Resists normal acids, alkalis, oils, greases, some solvents. Smooth outside, textured inside... reversible for non-slip grip. Sizes small, medium, and large. Let PIONEER help you select proper gloves for your job from the complete PIONEER line.

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Lead-rubber gloves protect against x-rays and gamma rays of radioactive materials. Used by medical, nuclear, and industrial technicians, they may include a leather outer covering to prevent damage to the lead-impregnated rubber. Lead-leather gloves are also available for radiation exposures.

Mittens of aluminum-coated fabric between two layers of asbestos, with jersey linings, offer good protection from heat. Other materials used for mittens include leather, horsehide, steel-reinforced leather, felt, and industrial wool. These are available in a variety of lengths with and without gauntlets.

### Fit is Important

Gloves that are too large will catch on sharp, jagged objects. If they are too small they will tear or puncture easily and the wearer may damage them when pulling them on or off. Gloves should be slightly large rather than too

small, as perspiration and swelling of the hands may cause discomfort and difficulty in removal. Often a glove will fit comfortably, but after prolonged use some unseen defect will cause irritation. Care should be used in selecting gloves to avoid this possibility.

Where workers are constantly turning in gloves for replacements, the problem should be discussed with the glove manufacturer to make sure the correct type is being used for each operation. Some companies have their storerooms mark each type for its proper usage.

**Salvaging gloves.** Several outside services specialize in reclaiming cotton, leather, leather palm, rubber, neoprene, goat skin, and asbestos gloves. They inspect old gloves carefully and repair them by restitching, patching, or reinforcing worn spots with an additional layer of the same material. Then the gloves are reshaped on heated forms to prevent shrinkage. All rough seam

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**SETS UP IN SECONDS** so that the patient can be placed on it immediately. When folded, Haggard's Stretcher needs a space of only 24" x 50" x 6". Can be mounted on wall or carried in any vehicle.



**QUICK IMMOBILIZATION** of arms and legs is accomplished through use of well-placed bandage and strap openings in Haggard's Stretcher. Lower section divided for ease of immobilizing legs.



**X-RAY WITHOUT MOVING** injured person. Patient can be X-rayed or fluoroscoped directly on the stretcher... no distortion, no interference by materials. Eliminates possibility of further shock by undue handling.

Ask your MSCO distributor for a demonstration of Haggard's Stretcher, an MSCO exclusive, or write direct.



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first aid*

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## INTRODUCING... A NEW JUMBO SIZE SIPCO DUNKING STATION

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**UNIT No. 1J**—Heavy duty cast aluminum JUMBO canister, attractive eye-catching metal sign, upright and heavy weighted base. 42" high, wt. 26 lbs.

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**UNIT No. 3J**—(not illustrated)—Canister alone with mounting bracket.

**PRESENT SIPCO USERS!**  
Order NEW JUMBO size canisters separately. They are interchangeable with your present standard size units.

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edges are smoothed out, the gloves are restored to original softness, tied in pairs and returned in containers.

Gloves used for handling oil, acids, and alkalis are cleaned, reshaped, patched, and then re-glazed or coated. They are returned rolled to prevent cracking. This service can be used with a scheduled pickup and replacement.

Some glove service organizations have their own laboratories

and will analyze and develop coatings for specialized operations. They will process free of charge a trial order of dirty gloves which may seem ready to be discarded because of their soiled or damaged condition.

### Creams and Ointments

Where protective clothing is not practicable, creams and ointments are helpful in protecting the skin against irritants. These products are made in water-resist-

ant and water-soluble types, each in several grades for differing exposures.

**Water-resisting creams** are used where a cutting oil, cooling lubricant, or other irritant has a water content of more than 10 per cent. These are sometimes greasy and cannot be used where damage to parts being handled might occur. Such creams can be removed with soap and warm water.

**Water-soluble creams** are preferred for protection against cutting oils, paints, lacquers, and varnishes.

Employees working with solvents should wear gloves where possible, but creams are sometimes a helpful substitute. Since solvents dissolve fats and oils, they naturally dissolve the natural oils of the skin.

To be effective, coatings of creams or ointments should be renewed frequently. They are not intended for protection against highly corrosive substances.

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Want to handle industrial liquids with greater safety? Then install Tokheim hand pumps—specially adaptable to maintenance and production work. They help prevent spilling, slopping, over-filling, dripping. Your plant is kept cleaner—work is speeded—waste halted—accidents prevented.

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Factory Branch: 475 North Street, San Francisco 3, California  
In Canada: Tokheim-Reader of Canada, Ltd., 305 Temple St., Toronto, Ont.

### Our Vulnerable Backs

—From page 52

well engineered material-handling equipment and training in lifting techniques. The remaining one is a problem of personal deportment.

Our educational program has two approaches: general and specific. The first consists of an indoctrination talk and a supervisory training program. The specific, or individual, approach involves corrective counseling by safety personnel and by the nurses.

We devote a good portion of the indoctrination talk to explaining and demonstrating the causes of back injuries. The proper manual lifting method is vividly demonstrated with a mechanical robot, the model for which was obtained from our insurance carrier.

The robot is kept erect with a thread, representing the back muscles, between the pelvis and the shoulder blades. If lifting is performed properly with the knees bent, the thread holds the strain, but if lifting is attempted

**Weatherite BAKED ENAMEL SIGNS** STANDARD REGULATION SIGNS OF ALL KINDS FOR SAFETY AND EFFICIENCY

Write for Catalog

**PRAIRIE STATE PRODUCTS CO.** 3822 LAWRENCE AVE. CHICAGO 25, ILL.

with the robot's back bent and knees straight, the thread snaps immediately. This dramatic demonstration is very well received.

One complete supervisory conference meeting was devoted primarily to back injury. We tried to show the supervisors enough anatomy so that they would appreciate the problems involved. We displayed a series of 18 colored medical slides, and followed this with a further description centered around a human skeleton obtained from Adelphi College. We then closed with the robot demonstration described above.

An even more important stage of education is involved directly at the nurse/patient stage. As mentioned earlier, many cases of minor back injury are attended by the nurse. At this point a good educational approach can prevent further or more serious injury. Two points can be emphasized.

Those with a position or posture problem can be shown what constitutes good posture and how to attain it. Obviously, it implies an imaginary vertical line transfixing the ear, shoulder, hip, knee and ankle. Contrary to general lay opinion, good posture is not obtained by throwing back the shoulders, but rather, by rotating forward the pelvis. We show pictures demonstrating this to patients while they are receiving treatment under the lamp or diathermy. Simple exercises are described which will help them limber up the low back and strengthen the posture.

Similarly, the nurse explains the fundamentals of correct lifting to those who give a history of pain associated with definite lifting incidents. Illustrations of right and wrong methods are given to these people either while waiting for treatment or during it.

## Legal Aspects

—From page 25

the working force—including the right to hire, suspend or fire.

In another case, arbitrators ruled that if a contract doesn't mention plant rules, employers have a right to make and enforce them on their own. Unions, naturally, can challenge that the

rules violate the contract. On union demand, an employer must negotiate, but employees should observe even challenged rules until results of the challenge are learned.

While employers, then, have a right to make safety rules, employees or unions may challenge them. Moreover, if, after refusing to meet with the union to discuss a challenged or allegedly objectionable rule an employer should discipline an employee for its violation, he shouldn't expect his legal staff to successfully defend

the action. Refusal to discuss a disputed rule with the union might overshadow a case's merits, regardless of the reasonableness of the rule. And it could be that the union objections are well taken.

If, for example, employees are required to wear safety glasses without regard to circumstances, an employer couldn't hope to defend the rule successfully over union challenge, especially if no hazards had existed. In other words, disciplinary action is upheld for violation of reasonable

**FOR MAXIMUM SAFETY**  
all over your plant use  
**Safety GRIP-STRUT**



Pat. Pending

the new basic material, all in one piece (including channels), not welded, riveted or expanded in steel or aluminum, in standard sizes and gauges. Safety GRIP-STRUT presents an open space, in a diamond pattern, in excess of 55% of the area for ready access of light and air and gives a positive NON-SKID footing in all directions. Ideal for work platforms, stair and ladder steps, flooring, balconies, catwalks, machinery guards, fire escapes and for original equipment safety treads.

### Important Safety Features

- ★ Fire proof
- ★ Slip proof
- ★ Maximum strength
- ★ Minimum weight
- ★ Easy to stand on
- ★ Cool in summer — warm in winter

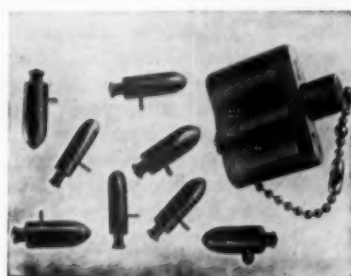
### Big Economy Features

- ★ For balconies — no extra light needed below — no extra heat.
- ★ No extra supports necessary — channels are integral part of the material
- ★ No secondary sprinkles heads needed
- ★ Self-cleaning
- ★ Cut and installed like lumber by your own maintenance force
- ★ Low in original cost

Distributors in all principal cities. Consult yellow pages in phone book under "GRATING."

## GRIP-STRUT division

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4018 S. PRINCETON AVE. • CHICAGO 9, ILL.



Free sample when requested on company stationery.

## CUT DOWN NOISE WITH THE SMR EARSTOPPER

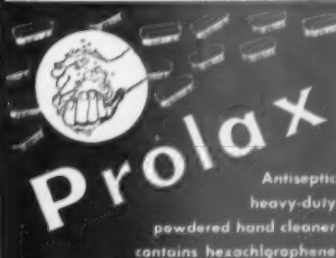
Soft, comfortable, resilient, the SMR EAR STOPPER adjusts itself to all shapes, turns and movements of the ear canal. Tends to anchor itself in the ear. Has a long life and is reasonable in cost. Furnished in a plastic case. Forty-five cents per set in gross lots.

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1805 Beverly Blvd., L. A. 57, Calif.



## Soap and brush action without any brush



Borax scrubber in Prolax powder acts like millions of fine tiny brushes. Makes stubborn grime vanish quickly.

Its hexachlorophene, through regular use, builds an invisible film on the skin that reduces by as much as 95% the resident bacterial population.

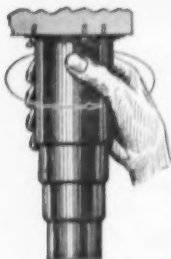
Correct for both shop and office; popular with both men and women.

Protect your valued employees from dermatitis with this heavy duty cleanser that is so kind to the skin.

For free sanitary survey  
of your premises ask  
your Dolge service man

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## Guide Pin Covers



### PROTECT OPERATOR AND GUIDE PINS

Effectively guard against injury to operator, die and press on operations where bushings leave the guide pins. Protect pins and bushings from chips and dirt when entire pin and bushing are covered. Inexpensive, easy to attach.

Felt Oiler Ring in top units provides **POSITIVE** lubrication.



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**Wiesman Manufacturing Co.**  
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rules, but not for violation of their opposite.

Whether this conclusion is right or wrong, employers obviously can't refuse to discuss rules with unions unless prepared for a challenge.

Now, the foregoing relates largely to the first and second of the three E's. Let's go to the last—enforcement—some of whose elements are related to education and engineering.

If rules are to be accepted, they must be clear and known by employees. Employees can't be disciplined for violation of unenforced "on-paper" rules. And a company can't enforce rules unless ready to show they are fair and undiscriminatory.

Now, the penalties for violations:

First, remember that disciplinary action is subject to arbitration. Arbitrators determine if there was proper cause for the discipline, and if it was overly severe. Often, management is overruled. And, frequently, claims for back pay result.

Second, remember that a company has the burden of proving that its ruling was proper. Even then, some arbitrators hold that the company still must show that the penalty imposed wasn't too severe.

Third, it should be remembered that discharge and discipline are serious. Did the employee know he was violating a rule? Was his violation intentional? Were similar violations previously condoned? Those are all questions management must ask itself.

If exceptions to rules are permitted, management must be cautious, since records seldom are kept of extenuating circumstances that lead to an exception. And enforcement of previous "exceptions" may lead to charges of discrimination. Naturally, discipline should be the same for union and nonunion employees. Both should be treated equally.

It seems to me that success of a safety program depends on understanding and cooperation with all levels of supervision, especially those dealing with personnel relations and labor relations.

Finally, of great importance, too, is the education of employees and

## ★ The Positive Ladder Safety Device



### Locks AUTOMATICALLY & instantly-holds

*Prevents death and injuries from falling.*

**Automatic: Positive.** Will catch workman if he starts to fall even if unconscious.

**Inexpensive.** Easy to install. No upkeep. Clamps to any rung ladders, peg ladders, pole or frame. No welding or cutting.

**Simple to operate:** Requires no attention from climber.

Notched rail hot dipped galvanized. Entire equipment rust and corrosion proof.

Can be kept free of ice by applying heat inside carrier rail.

In use approx. 9 years. Approved by Safety Engineers and Govt. Agcys. throughout country. Patented. Manufactured only by

**SAFETY TOWER LADDER CO.**

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BURBANK, CALIFORNIA

## SLIP-ON GUARD



### GETS-A-LITE GUARD and GUIDE

**Quickly and Easily Installed  
by Anyone — No  
Tools Needed!**

- Simply slip GETS-A-LITE GUARD AND GUIDE over the fixture, as illustrated.
- Made of indestructible spring steel wire. Nothing to break, get out of order or replace. Will last indefinitely.
- Once installed, GETS-A-LITE GUARD AND GUIDE is NEVER removed.
- Nothing to unlock, fuss with or lock, when changing lamps.
- GETS-A-LITE GUARD AND GUIDE actually steers lamp into socket, enabling maintenance man to change lamp in 10 seconds!
- Available for 40 watt and 100 watt fluorescent lamps.

**GETS-A-LITE CO. — Dept. NS-47**  
2845 N. Milwaukee Ave., Chicago 41, Ill.



their union representatives, who should be encouraged to want to abide by company rules.

And that isn't so difficult as it sounds. Most people are used to restrictions. I'm sure they'll be inclined to accept rules if given good leadership from employer and union.

Even if a joint company-union safety program doesn't exist, and management has the unquestioned right to make rules, why shouldn't it consult employees and hear their views—without compromising company prerogatives, of course. Perhaps it's wishful thinking to expect a union to accept company-sponsored rules immediately. But men sold on the value of rules can prove invaluable later in keeping fellow workers in line.

In closing, I'd like to quote John P. Troxell, director, Division of Industrial Relations, Stanford University Graduate School of Business:

"The majority of managements do not seek, nor do most unions care to offer, a formalized program of union-management co-operation on production matters. The informal method of consultation as the need arises has yielded good results where the parties have confidence in (each) other and approach a common problem with realistic understanding of, and concern for, the long-run interests of both employer and employees."

In no other field I know of should there be less management-labor discord than in safety. Both management and labor should put their shoulders behind a program aimed at insuring the health and safety of employees and mutual benefit to both parties.

## AIHA Announces New Hygienic Guides

FIVE MORE subjects have been added to the American Industrial Hygiene Association's Hygienic Guides. The recent additions, published in the current issue of the *American Industrial Hygiene Association Quarterly*, are on carbon disulfide, ethylene dichloride, hydrazine, methylene dichloride, and nickel carbonyl.

Each Hygienic Guide is devoted to one material. It contains the latest available information on potential hazards, maximum allowable concentration to which employees may be safely exposed over long periods, and engineering and medical control.

The subjects of previously released Guides include acetaldehyde, amyl acetate, anhydrous ammonia, aniline, arsine, benzol, beryllium, butyl alcohol, cadmium, carbon monoxide, carbon

tetrachloride, chromic acid, ethyl alcohol, fluoride-bearing dusts and fumes, fluorine, formaldehyde, hydrogen cyanide, hydrogen fluoride, hydrogen sulfide, mercury, nitrogen dioxide, sulfur dioxide, 1,1,1-trichloroethane (methyl chloroform), and zinc oxide.

Copies of the Guides are available from the American Industrial Hygiene Association, 14125 Prevost, Detroit 27, Mich., at 25 cents each.

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need the  
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**SURETY SURESEAL**  
**INDUSTRIAL GLOVES**

Even your best production equipment is useless without the healthy hands of your employees on the job. And wherever workers hands are subjected to oils, acids, solvents, chemicals and other liquids, costly injury and dermatitis always threaten. That's why Surety Sureseal gloves earn their way, by affecting production-saving, cost-saving and injury-free conditions.

Exclusive Sureseals (made from Hycar) withstand more solvents, oils, acids, etc. than any gloves we know—outwear rubber and other synthetics (we make them, too) up to 14 to 1. So, Sureseals provide maximum protection and longest service life.

**PROVED** more wear per pair

**TEST FOR YOURSELF AT OUR EXPENSE—**  
Tell us on your letterhead about your requirements (specific material to which gloves are subjected) and we'll send you a pair of Sureseals for your own test.

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FOR 10 YEARS WE HAVE SUPPLIED INDUSTRY WITH THE MOST COMPLETE LINE OF ALUMINUM SAFETY PLIERS AND TONGS AVAILABLE.

We design and make **SPECIALS** for your needs.

ASK FOR OUR NEW CATALOG NO. 1056

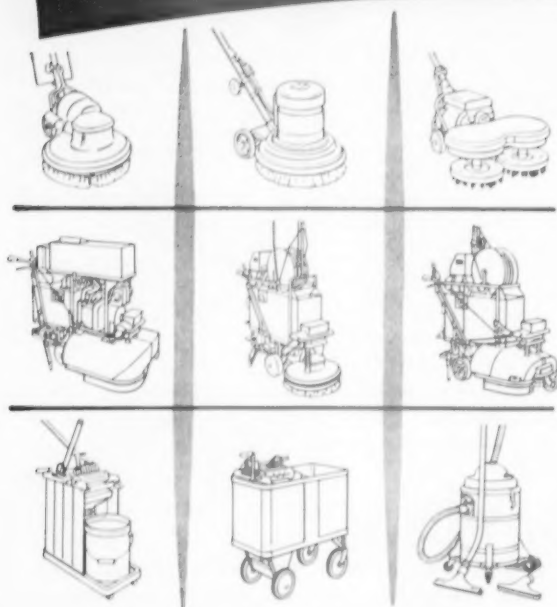
**OSBORN** Manufacturing Corp.  
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# Keep your floor-maintenance men happy...



## with *Job-Fitted* EQUIPMENT!

Choose from the **COMPLETE Finnell Line**  
More than a score of models and sizes  
permits selection of the equipment  
that's exactly right for your job!



However much a maintenance man may want to do a good job, and at the same time show savings in labor costs, he's *stymied* if the machine is too small, or too large, or is otherwise unsuited to the job. Different floors and areas call for different care and equipment. That's why *Finnell makes more than a score of floor-maintenance machines*. From this complete line, it is possible to choose equipment that is correct in size as well as model... that provides the maximum brush coverage consistent with the area and arrangement of the floors.

Finnell offers *Conventional Polishing-Scrubbing Machines* in both concentrated and divided-weight types, each in a full range of sizes... a *Dry-Scrubber*, with self-sharpening brushes, for cleaning grease-caked floors... *Combination Scrubber-Vac Machines* for small, vast, and intermediate operations, including self-powered as well as electric models... *Mop Trucks*... a *Wet and Dry Vacuum Cleaner*, in baked enamel or stainless steel, with 1½ hp By-Pass Motor. In addition, Finnell offers a full line of fast-acting *Cleaners* for machine-scrubbing... *Sealers* and *Waxes* of every requisite type... *Steel-Wool Pads* and other accessories — everything for floor care!

In keeping with the Finnell policy of rendering an individualized service, Finnell maintains a nation-wide staff of floor specialists and engineers. There's a Finnell man near you to help solve your particular floor-maintenance problems... to train your operators in the proper use of Finnell Job-Fitted Equipment and Supplies... and to make periodic check-ups. For consultation, demonstration, or literature, phone or write nearest Finnell Branch or Finnell System, Inc., 2204 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

### FINNELL SYSTEM, INC.

*Originators of Power Scrubbing and Polishing Machines*



BRANCHES  
IN ALL  
PRINCIPAL  
CITIES

# New SAFETY EQUIPMENT

Product announcements in this section are reviewed for compliance with the advertising policy of the NATIONAL SAFETY NEWS. Inclusion should not, however, be construed as endorsement or approval by the National Safety Council.



**First Aid Kits**

Three new first-aid kits, two of which are illustrated above, have been introduced. All were designed for the smaller industrial plants and the two illustrated have hinged covers and are suitable for safety awards and automobile glove compartments.

The third kit measures approximately 13 x 10½ x 2½ in. and is waterproof and can be either mounted on the wall or carried. It contains a wide assortment of emergency medical supplies and is especially designed for small shops employing up to 25 persons.

**A. E. Halperin Co., Inc., 75-87 Northampton St., Boston, Mass. (Item 1)**



**Self-Powered  
Combination  
Scrubber-Vac**

Gasoline- or propane-operated self-powered, combination, scrubber-vac floor-maintenance machines have 18, 30 and 36 in. brush spreads.

The machines automatically apply cleanser, scrub and pick up (damp-dry the floor)—all in one operation. The 30 and 36 in. sizes also flush-rinse if required.

There are no switches to set for fast or slow—a slight hand pressure on the clutch lever adjusts the speed to a desired rate (up to 150 fpm. for the 18-in. size and 136 fpm. for the 30- and 36-in. sizes). One

engine operates all working parts. The powerful vac performs quietly. Monoxide eliminator, powder dispenser and rinse assembly are accessories.

**Finnell System, Inc., Dept. NSN, 2200 East St., Elkhart, Ind. (Item 2)**



**Self-Ventilating  
Hood**

The "Breather-Tunnel" design of this self-ventilating hood is an inverted V-shaped tunnel through which fresh air easily passes. Hazardous liquids run harmlessly over the top of the tunnel. (Airlines or self-contained air supplies are not necessary.)

The wearer breathes fresh air easily and the constant air supply keeps the hood relatively cool and prevents window fogging.

The hood is made of a lightweight, flexible material called Gra-Lite. It is said to be highly inert, and to protect against a wide range of industrial chemicals.

All seams are armored, rather than coated. The armoring gives added protection at the points of greatest danger from liquid seepage or penetration.

The clear acetate window is easily replaceable and a ratchet headgear is adjustable to 32 head sizes.

**Standard Safety Equipment Co., 232 W. Ontario St., Chicago 10, Ill. (Item 3)**



**Welding Cable  
Connectors**

Neoprene rubber insulators, strongly built around steel sleeves, have tapered ends to stretch snugly over the welding cable. They lock out moisture,

oil, and dirt; do not catch against obstructions, and will not break and scatter, leaving the electrical connection exposed.

No capital equipment is needed for installation or vulcanizing. By unscrewing an Allen screw the insulator is slid off and slipped over the cable end. Then, the cable is connected as usual, and the insulator is slid back and tightened.

Two high-copper alloy sections are tapered together for greater metal-to-metal contact in a quickly detachable connection. With a twist of the hand, a steel locking bar rides a cam to lock the sections together. Model 2/O-R takes cables 1/O and 2/O, with mechanical, soldered or brazed connections. Model 4/O-R takes cables 3/O and 4/O, soldered or brazed connections only.

**Jackson Products, Inc., 31739 Mound Rd., Warren, Mich. (Item 4)**



### **Neoprene Cork Soles**

"Saf-T-Step" is a neoprene cork sole that does not compromise wear for weight. Although it is extra light due to a special compound, the sole offers high abrasion resistance. It is flexible and resilient and resists oil, grease, chemicals, and acids. This sole has been styled for modern industrial use with a smart-looking green oval medallion in the shank.

**American Bilrite Rubber Co., Chelsea 50, Mass. (Item 5)**



### **"Squared Shape" Plastic Frame Glasses**

The "700 Series" glasses are plastic frame models in a "squared shape" design.

The attractive glasses feature greater comfort and strength. The plastic used for the frames is acetate butyrate, giving the frames flexibility as well as the strength to withstand the impact of direct blows; yet the frame can be bent or twisted without serious damage.

The lens channel of the frame is integrally molded instead of being routed after molding. This allows an even lens retention throughout the periphery of the lens channel. Nose pads are also larger. The frames are available in flesh, bronze and green shades. Sideshield models (700S) are available.

**Sellstrom Mfg. Co., 222 S. Hicks Rd., Palatine, Ill. (Item 6)**



### **Lightweight Floor Maintainer**

FM-12 weighs 31 lbs., including the 12-in. brush. It is equipped with a 1/3 hp. constant duty motor and has interchangeable attachments for waxing, scrubbing, polishing, steel wooling, and buffing.

The power unit is equipped with lifetime lubricated ball bearings and precision matched gears including a synthane silencing gear for quiet operation.

The new handle design of the FM-12 eliminates the need for locking in an operating position. The handle can be moved to different positions while operating and can be locked in a vertical position for carrying and storage.

**Clarke Sanding Machine Co., Muskegon, Mich. (Item 7)**

### **Metal Fyr Powder**

Metal Fyr Powder was developed specifically to control magnesium and other incendiary metal fires. The new extinguishing agent forms no corrosive gases which might harm precision machinery and it is said to be an effective way of combatting hazardous magnesium chip fires.

The non-absorbent powder may be applied with a scoop or shovel, and will not cake when left in open containers.

The product carries Underwriters' and Factory Mutual Laboratories approval and may be ordered in 7-lb. tubes, 40-lb. pails or 350-gal. drums.

**Fyr-Fyter Div., Fyr-Fyter Co., 221 Crane St., Dayton, Ohio. (Item 8)**

### **All-Purpose Heat Fabric**

Ray-Tex is a durable, all-purpose heat fabric. The fabric has a variety of uses and was developed by interfusing an aluminum compound with a special fabrication of tough cotton cording. Ray-Tex will not crack, peel, or slough off in heat or cold. It is highly resistant to rough usage, oils, greases and



most acids and alkalis and can be easily cleaned with solvents, steam, or soap and water. Fire blankets, self-standing welding shields, curtains, drapes, covers are possible uses.

Improved Ray-Foil is a radiant heat protective fabric that has increased strength, greater flexibility and durability over the previous Ray-Foil. These qualities are provided by Mylar, a method of laminating the metalized coating to the fiber glass fabric.

Ray-Foil is available as shields, curtains, drapes and certain types of garments developed to provide reasonably comfortable working temperatures within inches of high radiant heat.

**Frommelt Industries, P. O. Box 165, Dubuque, Iowa. (Item 9)**



**"Spray-Bath"  
Shower System**

This Spray-Bath shower system has been designed for institutional and industrial shower bath installation. The machine can be easily installed in any shower room and delivers a jet of gentle, thorough-cleansing Spray-Bath liquid at the touch of a finger.

The system is convenient for bathers, because they do not have to reach for sticky bar soaps, contend with broken empty soap dispensers or risk slipping on a wet cake of soap. It is also a convenience to the maintenance department because they no longer have to clean up scummy, sticky shower floors resulting from cleansing agents. The system, including the motor, compressor tank and self-timing valves, is designed for use with the manufacturer's Spray-Bath liquid that gives a rich lather and removes dirt and grime.

**Huntington Laboratories, Inc., Huntington, Indiana. (Item 10)**



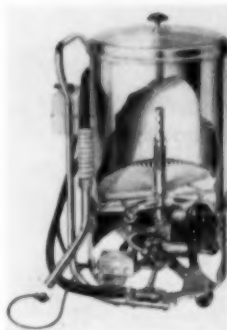
**Lens Cleaning  
Station**

This unit simplifies protective eyewear lens cleaning. The heavy-gauge steel, grey-green dispenser measures 9 x 15½ x 4 in. A plunger-type spray top 8-oz. bottle provides anti-fogging lens cleaning fluid. Single optical tissues, 5 in. x 9 in. are dispensed from two separate positions and a receptacle for used

tissues is provided. The unit is serviced through

Lens cleaner for refills is available in pints and gallons. Optical tissues, 5 x 9 in., 240 tissues per box, are available.

**U. S. Safety Service Co., 1215 McGee St., Kansas City 6, Mo. (Item 11)**



**High Speed Fat  
Filtering  
Machine**

Fry-Saver is a high-speed fat filtering machine that does not require filtering aids. The cooking fat filters through a microscopically fine Porosite filter which removes sludge and other impurities in the fat. This filter cartridge provides 15 times the filtering area of a disk of equal circumference and is easily replaceable when required.

The new method of fat filtering is practically automatic, operating like a high-powered vacuum cleaner. An employee can quickly drain the unfiltered cooking fat out of the fryer through the intake hose, a feature said to eliminate the dangerous and unpleasant job of draining this fat through the filter cock underneath the fryer. The fat is then purified through the filter, and if any residue remains in the fat chamber of the fryer, the Fry-Saver can clean it out with a filtered hot cooking fat flush which is pumped back into the fryer through the same hose. Impurities are then drawn out of the fryer through the hose, after which all the filtered fat is pumped into the fat chamber of the fryer.

The Fry-Saver is a self-contained, electrically operated, portable unit specifically designed to be used by unskilled workers.

**S. Blickman, Inc., Weehawken, N. J. (Item 12)**

### **Barricade Tapes**

Strong barricade tape can be strung across an open doorway or between posts without other backing. Principally designed to warn personnel away from radioactive areas, the tape has a magenta stripe running through a white background and is made of durable Saran non-stretch plastic. It is sun-fast, moisture proof, nonconductive and easily cleaned.

Other colors, such as a black stripe on yellow, are available in ¾-in. widths and 50-yd. lengths on re-usable reels. The tapes command attention and give protection as a barricade around a wide variety

of danger areas. Other widths and color combinations are available on special order.

**Brenton Equip. Co., 374 Brannan St., San Francisco 7, Calif. (Item 13)**



**Compact  
Dynamometer**

This small dynamometer has a large range and gives an accurate reading. The PIAB is compactly designed to measure tension, traction and weight. Types L, C, and D (up to 2,000 lbs.) can be carried easily in a pocket. It provides positive safety at all tonnages and rough handling will not affect its accuracy.

The annular conical disc springs of high compressibility have extremely long life due to the short flexing motion. Special dampers protect against a sudden increase or decrease in load. Relatively high or low temperatures will not affect the PIAB's accuracy and it is protected against corrosion by high-quality zinc plating on the exterior and interior of the casing. It is dust-tight and water-resistant.

The PIAB has many uses including testing elevator chains and cables, cranes, hoists; springs and shock absorbers; safety belts and ropes for firemen, window washers, steeplejacks; controlling loads on ground drills—oil, mining, etc., and checking weights on portable cranes.

**The Walpole Co., Inc., 100 Boylston St., Boston 16, Mass. (Item 14)**

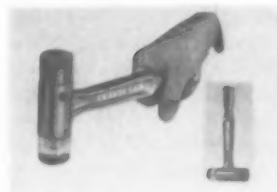


**Pipe  
Hook**

A potential pipe hook has been designed for handling thin-wall, beveled-edge oil or gas pipe. The pipe hook has a 1 in. throat opening and a wide flange lip to give more bearing surface. A soft brass insert has been placed in the neck so that no damage can be done to the beveled edge. The new hook is

a steel casting with 79,000 psi. tensile, weighs 8½ lbs. and has a rated safe working load of 8,500 lbs.

**Newco Mfg. Co., P. O. Box 5939, Kansas City 11, Mo. (Item 15)**

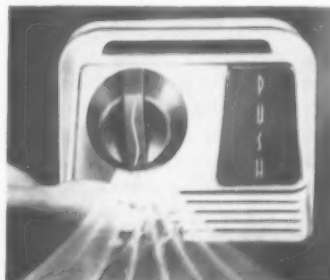


**Metal Body  
Plastic Hammers**

Teniplex inertial impact (no bounce), all-metal body plastic hammers have been engineered to reduce the working hazards and high costs of ordinary plastic and soft faced hammers. The hammers feature a one piece, high-tensile, non-ferrous alloy construction; life-time unbreakable handle; no-bounce, no-shock; all-purpose, machined plastic tips; durable, inexpensive, threadless plastic tips; no mushrooming, chipping, or sparking; contour cut safety grip; safety slip guard; all metal "I" beam construction, and a handy, hang-up hole.

The impact hammers are presently available in the No. 2150 2-lb., 1½ in. faced tip and the No. 2175 2¼-lb., 1¾ in. face.

**Custanite Corp., 1228 Utica Ave., Brooklyn 3, N. Y. (Item 16)**



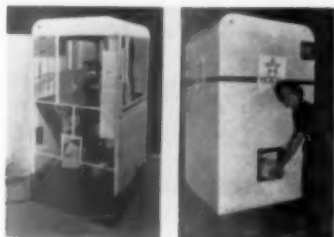
**Hand-Hair  
Dryers**

New exterior styling and operation features have been incorporated in this line of electric hand and hair dryers for public and private washrooms.

The smart looking exterior will blend with most modern washroom fixtures. A dynamically balanced motor on resilient mountings produces quieter, smoother operation and the blower and heating unit delivers more cubic feet of warm dry air per minute, with a reduction of 33½ per cent in current consumption.

The plastic push bar which starts the automatic operation of the machine completely insulates the user from any chance of electrical shock. The Air-flex timer which controls the automatic drying cycle has been improved and the drying cycle can be adjusted by the owner for either hand or hair drying. The machine is produced in five different models. There is a new wall model hand or hair dryer; semi-recessed hand or hair dryer, and pedestal mounting of two hand dryers.

**Chicago Hardware Foundry Co., 1030 Commonwealth Ave., North Chicago, Ill. (Item 17)**



**Shop Towel  
Dispenser**

This machine dispenses shop towels in bundles of 5 or 10, one bundle at a time. The dispenser is designed to minimize loss and pilferage of shop towels. It holds 1,000 clean towels and the bottom of the machine holds as many as 1,000 dirty towels. The dispenser mechanism is actuated when soiled towels are thrown into the machine in an amount equivalent to the number in each clean bundle. The soiled towels strike a lever, which trips the counter.

The machine makes it possible for plants to replace insufficient rags with towels specifically designed and manufactured for shop use. Towel use can be controlled easily and distribution is more convenient and less time consuming. The dispensers can be placed in convenient locations in the plant.

The chute for soiled towels has "traps" so that once towels are thrown inside it is impossible for them to be withdrawn. Traps are made to control the types of material activating the machine and to prevent any products other than towels from tripping the counter.

**Industrial Wiping Cloth Co., Inc., 29-28 41st Ave., Long Island City 1, N. Y. (Item 18)**

### **Magnetic Sweeper**

A rotary magnetic sweeper picks up iron and steel from floors, driveways, tanks and other areas. The non-electric sweeper is made of permanent magnets. It loads on 360 degrees of its surface and rotates as a complete unit. It rolls or climbs over obstacles and automatically equalizes a large load. It unloads by pulling off the cover and carries a removable collection box. It is particularly adaptable to such industries as fertilizer, electrical equipment, nut and bolt, automotive equipment, foundry, lumber, etc.

**Magnetool, Div. of Multifinish Co., 26341 W. Eight Mile Rd., Detroit 19, Mich. (Item 19)**



**Waist Belt Supporter**

This waist belt supporter, commonly referred to as a "gut strap," has four-point suspension with four separate snaps. Each strap is provided with a

buckle to permit easy adjustment. It is made of quality harness leather in sizes 36 in. to 46 in.

**Mathias Klein & Sons, 7200 McCormick Rd., Chicago, Ill. (Item 20)**



**Portable  
Safety  
Island**

A safety island may be set up in minutes with this portable unit. It has many uses in street, sewer, electrical and other types of work. The unit is completely adjustable, both in length and width, from 36 to 60 in. in either dimension. When knocked down it makes a compact bundle. The entire unit is made of lightweight, electrically welded tubular steel.

**Bil-Jax, Inc., Archbold, Ohio. (Item 21)**



**Electric  
Elevating  
Tailgate**

Electric elevating tailgates for  $\frac{1}{2}$  and 1 ton trucks lift up to 600 lbs. in 15 seconds. The "Jiffy-Lift" can load and unload trucks quickly without heavy lifting and is geared to eliminate battery drag. The motor is reversible and has a built-in brake to prevent coasting. A heavy-duty pushbutton control has a built-in lock for security and to assure safe operation.

The all-steel ramp type unit weighs only 225 lbs. and is designed to save rear end over balance and provide better weight distribution with larger load capacity. There are no hydraulic lines, pumps or cylinders to break or wear out. All moving parts run freely on ball bearings.

**Mid West Body & Mfg. Co., Paris, Illinois. (Item 22)**

### **Eye-Saver Switch**

The Eye Saver Switch is a convenient device for protecting operators' eyes by requiring that the operator wear the glasses prior to each operation of the machinery.

The switch box controlling the machinery is maintained in the "Off" position by the glasses. The switch can be actuated only by removing the glasses from the switch and the operator must replace the glasses before it can be stopped.

It is adapted for convenient installation on both new and old machinery and is adaptable for various types of industries.

**Valco Machine Enterprises, 163 98th St., Brooklyn 9, N. Y. (Item 23)**



**Drum Faucet  
For Solvents**

Model U-008 is a corrosion-resistant faucet for dispensing corrosive and inflammable fluids in the chemical, food, pharmaceutical and photographic industries.

It is fabricated of 304 stainless steel and carries a Factory Mutual Engineering Division of Factory Mutual Laboratories approval.

Safety is featured in the faucet. Metal-to-metal contact has been eliminated in the operation of the valve by the introduction of Kel-F fluoro-carbon seal rings. The anti-flash screen prevents propagation of any flames entering the storage drum through the spout in the handling of inflammable solvents. The self-closing faucet opens against coil spring pressure and insures positive shut off when it is not held open manually.

The faucet can be quickly disassembled for cleaning and can be chemically and/or steam sterilized. The shank is supplied in interchangeable sizes of  $\frac{3}{4}$ ,  $\frac{3}{4}$  and  $\frac{1}{2}$  in. with tapered threads to allow snug fit in drum threads of the dispensing drums.

**Economy Faucet Co., 12 New York Ave., Newark 1, N. J. (Item 24)**



**Flexible  
Plastic  
Goggles**

Lightweight flexible plastic goggles provide comfortable protection to workers exposed to dust and liquid splash.

No. 565 goggles are molded from soft vinyl material and are contoured to fit snugly. They fit over most personal glasses. The wide window lenses are curved to allow full vision and small perforations angled away from the eyes give adequate ventilation. They are available in two lens styles—clear or green plastic.

**Chicago Eye Shield Co., 2306 Warren Blvd., Chicago, Ill. (Item 25)**



**Lineman's Gloves  
Medicated Powder**

"Lineman's Friend" is a medicated powder for use by workers who wear rubber protective gloves. The powder not only prevents stickiness but effectively safeguards against skin infections caused by bacteria and fungi. Laboratory tests indicate that the product retards the growth of fungi and bacteria commonly found on used rubber gloves.

The illustration shows fragments of worn rubber gloves, tested on a medium which supports the growth of bacteria and fungi. Plate A (left) shows a test with "Lineman's Friend," which has prevented growth of organisms. Plate B (right) shows growth of fungi from a rubber glove treated with ordinary talcum powder under the same controlled conditions.

The product is marketed in unbreakable plastic squeeze-in bottles so that gloves can be easily powdered internally.

**Skarshaug Testing Laboratories, Ames, Iowa (Item 26)**



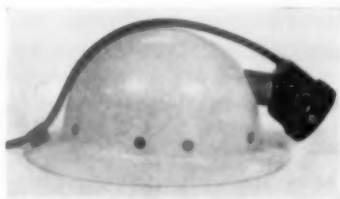
**Safety  
Stepladder**

The Twin Front Safety Ladder has steps on both sides and will be useful for industries and contractors.

The ladder rails are 1 1/6 x 3 1/4 in. The steps are 1 x 3 3/4 in. and are reinforced with 1/4 in. steel rods. Heavy duty U hinges and steel spreaders increase rigidity. The steps are 1 in. thick. The ladder carries the Underwriters' Laboratories approval.

**The W. W. Babcock Co., Inc., Bath, N. Y. (Item 27)**





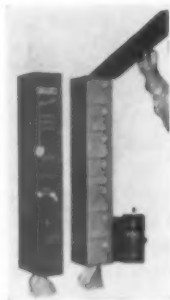
**Hard Hats with  
Lamp Bracket**

M-Series "Supergard" safety hats and caps have a universal lamp bracket. They are for use in mines and other places in industry where this type of equipment is required.

Light, compact, sturdy, and insulated, the hats and caps provide for both electric and carbide lamps, and are equipped with polyethylene head suspension. They can be instantly adjusted to all head sizes—6 $\frac{3}{8}$  to 8 in. (the headband is marked in various sizes, in divisions of  $\frac{1}{8}$  in.) which insures a correct fit. Even with winter liners, this adjustable feature is unimpaired.

The full-floating headgear reduces fatigue and the suspension is mildew- and fungus-proof and does not mat up with grease and oil and cleans easily and quickly. When the hat is re-issued, only the sweat-band must be replaced.

**The Boyer-Campbell Co., 6540 St. Antoine, Detroit 2, Mich. (Item 28)**



**Safety Lens  
Cleaner  
Cabinet**

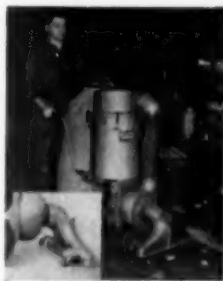
Increased capacity and reduced maintenance are features of the K-Lens-M "Skyscraper," a new industrial safety lens cleaning cabinet.

The cabinet has a capacity of 1,400 lintless cleaning tissues and a compartment for a 16-oz. spray bottle of liquid lens cleaner. Maintenance costs are reduced and refills are less frequent because of the large capacity. Convenience and assurance of an adequate supply encourages wearing of eye safety equipment.

The "Skyscraper" cabinet has two sections. One contains a finger-tip controlled spray bottle of cleaner and the main compartment contains 1,400 lens tissues, 4 $\frac{1}{2}$  x 9 in. in size. The cabinet is tamper-proof and only one tissue is dispensed at a time.

The cabinet can be mounted on a wall surface or on steel I-beam supports found in most industrial plants.

**The Wilkins Co., Inc., Cortland 44, N. Y. (Item 29)**



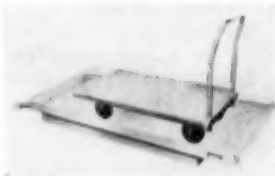
**Brush Attachment  
For Suction Floor  
Cleaner**

A brush attachment designed for use with the Floormobile suction floor cleaner loosens sticky materials or powder film residue from the floor so it may be lifted into the air stream by suction.

The Floormobile is a powerful, mobile floor cleaning machine that sucks up dust, dirt, string, paper, trash, etc. If the Floormobile has passed over some sticky material or material that has been pressed to the floor by passing traffic, the brush attachment loosens the material so it can be sucked up. In operation, a remote control cable attached to the handle presses the brush against the floor. The brush springs clear of the floor when the lever is released.

One man with the Floormobile can clean up to 20,000 sq. ft. an hour and with the new brush attachment the machine is even more efficient.

**Handling Devices Co., Inc., 43 Pearl St., Brookline 47, Mass. (Item 30)**



**Aluminum Hand  
Trucks and  
Dock Boards**

MET-L-ITE Hand Trucks have a formed aluminum deck with rounded corners and an adjustable wheel base for short or long turning radius. This radius adjustment permits the truck to turn on its own axis. The dock boards have safety tread plate, rounded extruded curbs with hand grips, and beveled edges.

The trucks and dock boards also offer the advantages of aluminum. They are lightweight, corrosion and acid-resistant, easier to clean, and free from odors, sparking and splintering. They are also non-magnetic and nontoxic.

They are available in standard sizes—widths from 24 to 40 in. and lengths 36 to 72 in. with capacities to 2,000 lbs.

**Voltz Brothers, Inc., 2519 Indiana Ave., Chicago 16, Illinois. (Item 31)**



JAMES DENMARK

James Denmark has been named St. Louis district sales manager for DeWalt, Inc. Mr. Denmark will direct the company's sales activities in Missouri, Southern Illinois and portions of Western Tennessee and Kentucky. He has been with DeWalt since 1954 as a demonstrator-salesman in which capacity he served as an assistant to the firm's district managers in special dealer promotions. He has served on a temporary basis in his present capacity since March, 1956.

\* \* \*

Iron Age Safety Shoe Div., H. Childs and Co., Inc., Pittsburgh, Pa. has named Harvey Childs, Jr. as sales manager. The company also announced that



JAMES M. HALLIDAY



HARVEY CHILDS, JR.

James M. Halliday has been appointed sales representative in the Michigan, Northwestern Ohio, and Northcentral Indiana territory for the company. Mr. Halliday's office will be in Grand Rapids, Mich.

\* \* \*



JAMES ALPINE

James Alpine has been appointed as Pioneer Rubber Co. manufacturer's representative for the East Northcentral Area. Mr. Alpine, who was formerly associated with McMaster Sales Co., Geneva, Ohio will represent Pioneer in Ohio, Michigan, West Virginia, Pittsburgh and the surrounding area.

\* \* \*

Sawyer-Tower, Inc. has announced William A. Reilly as executive vice-president.

Mr. Reilly played an important part in the consolidation of the Sawyer and Tower companies since their merger a year ago. The company manufactures protective clothing.

David P. Hornaday has been appointed advertising manager for the Wire Rope Corp. of America, St. Joseph, Mo. Prior to joining the organization, Mr. Hornaday was an account executive with Ayres, Swanson and Associates, Inc. Advertising Agency. The company manufactures a complete line of safety engineered slings, ropes and fittings for industrial, construction, mining and materials handling needs.

\* \* \*



WILLIAM E. SCHULZ

William E. Schulz, marketing specialist, has been appointed director of safety equipment sales for Davis Emergency Equipment Co., Inc., Newark, N. J. The company manufactures industrial safety equipment, with a division specializing in gas analysis and protection equipment.

Mr. Schulz was formerly vice president and general sales manager of American Mirror Works and he has done sales work in the field of medical and surgical equipment and has also been associated with Kidde Manufacturing Co.

\* \* \*

The Dallas branch office of the C-O-Two Systems Div. of the Fyr-Fyter Co. is now located in new quarters at 8111 Sovereign Rd., Dallas 11, Tex. In this new location the C-O-Two Systems Div. shares space with the Dallas branches of the Fyr-Fyter Div., the Pyrene-C-O-Two Div. and the Buffalo Fire Appliance Div.

Headquarters of the C-O-Two Systems Div. are located in Newark, N. J.

\* \* \*



Z. KHACHADOORIAN

Zavan Khachadoorian has joined the Sawyer Safety Products Co., Port Chester, New York as technical director. "Zav" will be in charge of all production and research involving coated fabrics, resins and all chemical items.

He was formerly with Sawyer-Tower, Inc. The company manufactures and distributes safety clothing and industrial protective products.

# TRADE PUBLICATIONS

These trade publications will keep you up-to-the-minute on new developments in safety equipment and health products. All catalogs are free, and will be sent without obligation. Just circle publication number on the Reader Service Postcard.



**1. Hoists:** A handy pocket-size circular of 14 pages presents the complete line of "CM" hand and electric hoists and related overhead materials handling equipment. Included are illustrations, descriptions and basic specifications of the various models of the Lodestar, Comet and Meteor electric hoists, the Cyclone and Blue Boy hand hoists, the "CM" Puller, and various types of CM Cranes and I-Beam Trolleys. Chisholm-Moore Hoist Division, Tonawanda, New York.

**2. Danger Tags:** Featured in this seven-page, two-color catalog are jumbo Danger Tags, for use on switchboxes, valves, machines and other locations where a temporary, forceful warning sign is needed. Also featured are a group of No Smoking Signs. Complete specifications and prices given. Stonehouse Signs, Inc., Stonehouse Bldg., 9th at Larimer, Denver 4, Colo.

**3. "Evidence from the Jomac Cost-Reduction Plan":** A 12-page booklet, shows how the analysis of glove use has cut costs in typical industries. In its forward, the "Evidence" booklet points out that in the buying of industrial gloves three important factors must be considered: (1) price of the gloves, (2) degree of protection they give the workers' hands and (3) wearing qualities—including comfort and flexibility. Jomac, Inc., Philadelphia 38, Pa.

**4. Safety:** Eye safety is serious business and clean, fog-proofed glasses, goggles and face shields are important aids to safety and efficiency. New 4-page folder describes chemically treated No-Fog Lens Cleaning Tissues which clean and fog-proof with plain water. Non-abrasive and may be used on glass or plastic. Carhoff Co., 11706 Kinsman Road, Cleveland 20, Ohio.

**5. Safety Shoes:** Catalog No. 17, two-colors, describes company's complete line of safety shoes. Featured are double duty executive oxfords, Goodyear Welt workshoes, Heavy duty workshoes, special types and high cuts, special safety work shoes for women, and rubber footwear. Lehigh Safety Shoe Co., Emmaus, Pa.

**6. Soap Dispensers:** Completely illustrated in color and containing full particulars on Bobrick's broad product line, the 1957 catalog includes information on liquid soap dispensers, powdered soap dispensers, lather dispensers, liquid and lather soap valves, tank-type soap systems and hand lotion dispensers. Bobrick Dispensers, Inc., 1214 Nostrand Ave., Brooklyn 25, N. Y.

**7. "Tricks of the Trade":** This free 35mm filmstrip has been developed for use with food service workers, non-professional hospital personnel, food handlers, classes and vocational school students. Behind the scene facts about the importance of personal cleanliness, a pleasant smile and a neat appearance are illustrated in this chuckle-producing filmstrip entitled "Tricks of the Trade." In addition, company also provides a free grooming teaching unit for schools and industry consisting of a colorful wall chart and individual leaflets for men and women on Hand Safety, Grooming; etc. Educational Service Dept., FSP, Bristol-Myers Products Div. 45 Rockefeller Plaza, New York 20, N. Y.

**8. Hydrolubes Spell Safety:** That's the title and thesis of this 16-pages (F-40134) that discusses advantages and limitations of water-base, fire-resistant hydraulic fluids; and their physical properties, installation, use, and maintenance. Carbide and Carbon Chemicals Co., 30 E. 42nd St., New York 17, N. Y.

**9. "Radiation Safety in Using X-Ray and Radioactivity with America's Finest Film Badge Service":** A new eight page brochure describes Landauer Body, wrist, and finger film badge services for monitoring x-ray, gamma and beta exposure and Landauer neutron badge service for fast neutron monitoring. R. S. Landauer Jr. & Co., 24 Plaza, Park Forest, Ill.

**10. "Basic Switches for Airborne Equipment":** 32-page catalog covers the complete line of phenolic encased aircraft switches as well as small, metal-covered hermetically sealed switches and high-temperature switches. Complete with photographs, dimensional drawings, electrical data and operating characteristics, Catalog 78 describes over 140 different switches, auxiliary switch actuators and terminal enclosures. Switches are shown in a variety of actuator designs, terminal structures and contact arrangements, including single-pole double-throw, double-pole double-throw, double-break, two-circuit, four-circuit and split. Micro Switch Division of Minneapolis-Honeywell Regulator Co., Freeport, Ill.

**11. Waste Receptacles:** Catalog 736 illustrates and describes complete line. Includes self-closing models available in 13 sizes; round open drop-in style; closed drop-in model with chrome top; and double garbage-can enclosures. Eight pages. The Bennett Mfg. Co., Alden, N. Y.

**12. Floor Care:** Four-page leaflet illustrates equipment for scrubbing, waxing, polishing, and mopping—including combination-use, heavy-duty units—plus waxers, sealers and cleansers, with recommendations for use. Finnell System, Inc., 500 East St., Elkhart, Ind.

**13. Temperature Controllers:** Complete specs are given in four-pager (MC-139) on a series of bulb-and-capillary indicating temperature controllers—including three temperature ranges, three bulb sizes, single or dual control circuits and four basic switch types. Fenwal, Inc., Framingham, Mass.

**14. Optical Parts:** Info on special lenses, prisms, and reflectors for industrial use is offered in 16-page Catalog L-117. Gives data on ground glass, heat-absorbing glass, retardation plates; glass engraving and optical coating services. Bausch & Lomb Optical Co., 635 St. Paul St., Rochester 2, N. Y.

**15. Work Gloves:** Complete line of curved-finger rubber, latex, neoprene, Buna-M, and plastic gloves are shown in color in this 16-pager. Includes chart of finger cot sizes; table showing resistance ratings of various glove materials to 199 commonly used chemicals and solvents. The Wilson Rubber Co., 1200 Garfield Ave., S. W. Canton 6, Ohio.

**16. Emergency Lighting Unit:** Bulletin describes an emergency lighting unit that operates instantaneously during power failures—and automatically recharges battery after use, first at high-rate then at trickle-rate to maintain state of constant readiness. Needs water only two or three times a year. Exide Industrial Div., Electric Storage Battery Co., P. O. Box 8109, Philadelphia 1, Pa.

**17. Safety Products:** Catalog alphabetically indexed, shows recommended safety devices for particular hazards. Its 54 pages contain a complete study of eye, face and head safety items. The reference listing is broken down into hazard, occupation, and trade name of protective items. Sellstrom Mfg. Co., 222 Hicks Road, Palatine, Ill.

**18. First Aid:** Catalog 100, illustrates company's complete line of first aid medical supplies and equipment. Considerable technical data included. Medical Supply Co., Rockford, Ill.

**19. Emergency Light:** Emergency light features flood light-type, sealed beam lamp-heads put strong central beam to light along passageways or pinpoint exits or critical controls. Timing mechanism guards against overcharging; water needed only once each year too. Bulletin gives full details. Carpenter Mfg. Co., Somerville, Mass.

**20. Lineman's Protective Equipment:** A 32-page illustrated catalog for use in public utility and industrial electrical fields has been made available. Among the Charco products featured are the Flex-Saf and Flex-Fit lineman's high voltage protective rubber gloves with sleeves, including Flex-Saf Contour Cuff Gloves; "Bulldog" blanket and wire clamps; utility flag clamp and danger flag; "Charcote" water repellent spray; Charco low voltage gloves; glove protectors and interliners; canvas storage bags for gloves and sleeves; danger flags; flag standards; other products for safety. The catalog also lists valuable informative technical reports available free from the company including the three 18" x 22" Glove Care Poster. Charleston Rubber Co., Charleston, S. C.

**21. Combustion-Testing and Air Measurement Instruments:** A new bulletin is available illustrating and describing a line of Gas Pressure Menometers, oil flow graduates, sling Psychrometers, air velocity meters, filter gauges, recording thermometers, carbon monoxide detectors, kits for testing gas heating equipment, CO<sub>2</sub> indicators, smoke testers, draft gauges, flue gas terminal meters, pressure point testers. General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.

**22. Four-Wheel Trucks:** Manufacturer now offers a series of 10 new product bulletins covering their complete line of four-wheel magnesium trucks. These bulletins present detailed descriptions and specification data on Magline platforms, trailer trucks, box trucks, and towveyor trucks, among other models in the line. Magline, Inc., Pinconning, Mich.

**23. Extinguisher Inspection Guide:** Complete information for conducting a comprehensive inspection of extinguishers is outlined in this handy brochure. Eight types of extinguishers are featured, including soda-acid, automatic clear water, foam vaporizing liquid, etc. Buffalo Fire Appliance Corp., 221 Crane St., Dayton, Ohio.

**24. Floor Maintenance:** A quarterly booklet that deals with everyday floor maintenance problems. This issue features an article on the care of asphalt tile floors, and includes a chart outlining their particular maintenance problems, causes and remedies. Hillyard Chemical Co., St. Joseph 1, Mo.

**25. Safety Chuck Keys:** A line of safety chuck keys and lathe wrenches are shown in this illustrated bulletin. Because the tools are self-ejecting, they are said to eliminate the injuries caused by "flying keys" left in the chuck. Lindstrom Mfg. Co., 173 Water St., New York 38, N. Y.

**26. Shut-off Valves:** Informative brochure explains a series of shut-off valves for use on liquid and gas lines. Details of design, function and specifications are given, as well as schematic drawings of the valves. Coppus Engineering Corp., 121 Park Ave., Worcester 2, Mass.

**27. Lineman's Waterproof Clothing:** Four-page brochure features a brand of lineman's waterproof suits. These suits, which include jackets, overalls and hoods, are made of nylon-neoprene material, are light-in-weight, and oil-, acid- and mildew-proof. John E. Dorsey Co., 570 E. First St., Boston 27, Mass.

**28. Tool Hand Guard:** Illustrated bulletin details a hand guard for use with any type of hand striking tool. Available in several sizes the guards will fit any tool in conjunction with a hammer. Tampco, Inc., P. O. Box 10344, Pittsburgh 34, Pa.

**29. Anti-Slip Coating:** Illustrated bulletin features an anti-slip coating to reduce slippery floor hazards. A synthetic resinous plastic, the coating is resistant to fire, oils, alcohol and water, and is easily applied by trowel or spray. The Flintkote Co., 10 E. 49th St., New York, N. Y.

**30. Drum Safety Valve:** A drum safety valve for controlling pressure changes in metal drums is featured in this illustrated bulletin. The valve, in addition to eliminating the danger of explosions, is said to reduce fuel evaporation loss by as much as 50 per cent in warm climate areas. Central Safety Equipment Co., 6611 Marsden St., Philadelphia, Pa.

**31. Fire Blankets:** Asbestos fire blankets are priced and described in this bulletin. The literature shows how these blankets dip in self-storing containers, ready for emergency use. Available in AA or AAA grade asbestos. Cotton Goods Mfg. Co., 216 N. Clinton St., Chicago, Ill.

**32. Underfoot Safety:** Folder, well illustrated, presents traction problems and tells how to solve them. Promotes safety through sure footing on wet, dry or oily surfaces. Describes uses on many danger spots, plus ease of application. American Abrasive Metals Co., 460 Coit St., Irvington, N. J.



**33. Gratings and Treads:** Catalog R-655 describes and illustrates non-skid gratings and treads in which a non-absorbent hard and tough abrasive is baked into V-shaped openings made along the top surfaces. The abrasive prevents a non-skid surface that is not subject to attack by chemicals according to manufacturer. The catalog also includes a safe load table showing the available sizes of grating sections and their load capacities as well as tread sections, dimensions and load gratings. Reliance Steel Products Co., McKeesport, Pa.

**34. Plant Protection:** Folder describes watchclock system for establishing plant protection against fire and theft, also provides a permanent record of watchman's activities throughout the period of his tour. Chicago Watchclock Co., 1524 S. Wabash Ave., Chicago 5, Ill.

**35. Grounded Lamp Guards:** Illustrated bulletin describes a line of grounded portable extension lights. Units consist of metal cages grounded internally in the molded phenolic handles which may also have a three-plug convenience outlet for grounding tools. McGill Mfg. Co., 650 N. Campbell, Valparaiso, Ind.

**36. Cigarette Dunking Station:** Cigarette smoking—not only house-keeping and fire problem—will cause fewer headaches if your plant is equipped with a dunking station described in this bulletin. The all-steel ashtray, finished in fire engine red, is permanently fastened to the wall. It is easily maintained. The tray can be filled with oil-absorbents or sand. Safety Floor Products Co., 3038 W. 84th Place, Chicago, Ill.

**37. Ear Protectors:** Bulletin describes ear protectors that filter out harmful sound and eliminate that "plug" feeling or vertigo caused by stopping the ears with a common plug. Safety Ear Protector Co., 2622 S. Robertson Blvd., Los Angeles 34, Calif.

**38. Industrial Signals:** Signals to warn workers in case of threatened disaster is described in this bulletin. A complete description of Federal's Warning System, entirely different from other signalling systems, is included. Federal Sign and Signal Corp., 8725 S. State St., Chicago 19, Ill.

**39. "Fire-Safe Cleaning With Magnus Solvent No. 5":** Bulletin No. 300 describes solvent No. 5 for use where fire safety regulations demand a

non-combustible cleaner. The solvent is recommended for cleaning electric motors, switch gears, dismantled parts and other moderately soiled parts. Magnus Chemical Co., Garwood, N. J.

**40. Emergency Lighting System:** A new centralized emergency lighting system that constantly supervises itself has been approved by Underwriters' Laboratories and exceeds the requirements of the National Electrical Code. The system not only reports, by flashing lights and buzzers, any fault of the system but sounds an alarm when an emergency lamp is removed from the socket. This built-in supervision makes the system foolproof and gives assurance that emergency lights will go on whenever regular powers fail. Emergency lights go off when power is restored. The 32-volt battery is automatically recharged and kept at full capacity by a constant trickle of charging current. The unit uses a long life nickel-cadmium battery that uses an alkaline electrolyte that does not corrode or give out obnoxious fumes. The system has been specially designed for hospitals, schools, office and industrial buildings. Catalog gives full details. Standard Electric Time Co., Springfield 2, Mass.

**41. Vacuum Sheet Lifters:** Hands and fingers of press operators can be protected from hazards by furnishing safety feeders and sheet lifters to employees. These items, along with many other safety devices for press operators are described in this catalog. F. J. Littell Machine Co., 4165 Ravenswood Ave., Chicago 40, Ill.

**42. Safe-T-Grip File Handles:** A new two-color catalog sheet, illustrates and describes new lightweight, aluminum Safe-T-Grip File Handles to convert ordinary files into new, convenient cutting tools so that they can be used like a plane for faster, smoother, neater cutting without cramped, tired muscles or skinned, scratched knuckles. The file handles are ideal for all filing applications, including machining, lathe work, tool and die making, and pattern making, etc. E. V. Nielsen, Inc., 129 Broad St., Stamford, Conn.

**43. Fork Truck:** A 3,000-lb. capacity, electric powered fork truck, designated as Model F-48T3, is specifically designed for use where low headroom is a problem, for such applications as loading and unloading street trucks, in tunnels, base-

ments and similar areas is fully illustrated and described in this new four-page folder. Detailed specifications covering such items as weight, power unit, tires, speeds, frame, trail and drive axles, motors, controls and the like are included. Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland 3, Ohio.

**44. "Ampco Centrifugal Pumps":** This six-page bulletin P-3b describes the new Ampco Custom-Built, off-the-shelf, high-speed centrifugal pumps for handling clear liquids and fine slurries. The centrifugal pumps are available in Type 316 stainless steel, Ampco Metal and Ilium "G" to combat corrosion, erosion, cavitation-pitting and wear. Hydraulic range includes capacities of 600 gpm, heads to 160 feet. Pedestal assemblies are available for base-mounted coupling connections or close-coupled connections to fit NEMA standard pump motors. Ampco Metal, Inc., 1745 S. 38th St., Milwaukee 46, Wis.

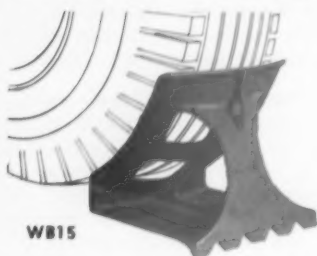
**45. Protective Skin Creams:** This booklet describes the company's line of protective skin creams. Two types of cream that protect hands against dust and staining, cutting oils and other petroleum products, caustic compounds in dry and aqueous solutions, coal tar derivatives and solvents. Ayerst Laboratories, 22 E. 40th St., New York, N. Y.

**46. Salt Tablets:** Literature describes impregnated salt tablets. These are non-sickening salt tablets made by a special patented process that uniformly coats the individual salt crystals to control the dissolving rate of the tablet. When there's danger of Heat Fatigue, workers feel better, work better and more safely. Morton Salt Co., 120 So. LaSalle St., Chicago 3, Ill.

**47. Floor Surfer:** Bulletin describes a floor patching and resurfacing material ready mixed for use. The material may be applied to wet or dry surfaces, indoors or out and does not require special equipment or skilled labor. Permamix Corp., 228 N. LaSalle St., Chicago 1, Ill.

**48. Protection From Poison Ivy:** Protection for field personnel is obtained by the use of Medicated Ointment described in this bulletin. Safety, comfort and efficiency of field personnel may be increased by protecting against poison oak, poison ivy and poison sumac. Western Industrial Pharmaceuticals Co., 150 Hemlock St., San Francisco, Calif.

## Heaviest Wheel Loads



### are securely held with CASTEEL WHEEL BLOCKS

SEND  
FOR  
BUL-  
LETIN  
No.  
N-57

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1636 Summer Street Hammond, Indiana

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Please send sample roll and information on:  
Sterilized Gauztex Bandage  
Gauztex Industrial Tape  
Firm \_\_\_\_\_  
Name and Title \_\_\_\_\_  
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## Here's how it works—

Printed below are two identical Reader Service postcards—the bottom one for your use; the top one for later readers of this issue. The numbers listed on each card are keyed to product advertised and the new safety equipment and trade publications described on

pages 125 through 135. Just circle the items you want to know more about, and we will ask the manufacturer to send you full information without obligation. Both cards are perforated for easy removal, and no postage is required.

## New Safety Equipment

Products featured in this section have been carefully reviewed by Council engineers so as to bring you only what's new and reliable in the safety field. Only new safety and health products, or new-worthy improvements in existing equipment are eligible for listing.

## Trade Publications

Here's a wealth of helpful trade literature—catalogs, spec sheets, booklets, brochures—that will help you compare before you buy. Whether you are in the market now, or think you may be at a later date, you'll want these valuable references in your safety equipment data file.

## Products Advertised

As you read through this issue of the NEWS, you will find advertisements describing equipment that may help you solve some of your accident problems. Instead of making a "mental note," make sure you get full information by circling the corresponding page number on the Reader Service postcard. The letters L, R, T and B locate the ads on the page—left, right, top and bottom. IFC—inside front cover; IBC—inside back cover; BC—back cover.

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National Safety News, April, 1957

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TRADE PUBLICATIONS:																							
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113T	113B	114L	114R	115L	115R	116L	116R	116L	116R	116L	116R	116L	116R	116L	116R	116L	116R	116L	116R	116L	116R	116L	116R
118R	119L	119R	120T	120B	121T	121B	122LT	122LB	122RT	122RB	122RT	122RB	122RT	122RB	122RT	122RB	122RT	122RB	122RT	122RB	122RT	122RB	122RT
123B	124	125LT	125LB	125RB	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B

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113T	113B	114L	114R	115L	115R	116L	116R	116L	116R	116L	116R	116L	116R	116L	116R	116L	116R	116L	116R	116L	116R	116L	116R
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123B	124	125LT	125LB	125RB	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B	125B

Please print your name and company in full—do not abbreviate

NAME.....  
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# The advertising pages of the News

... your guide to reliable suppliers

of worthwhile safety equipment

The advertising policy of the NEWS requires that all equipment and products meet established codes and standards, have the approval of recognized testing agencies, or have proven their value through actual use in industry. Council engineers and technicians screen every

advertisement to make sure that product description is accurate, and performance claims verified by reliable sources. It should not be construed, however, that products advertised are approved or endorsed by the National Safety Council.

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LOOK  
AT**

- the ADVERTISING pages
- the NEW SAFETY EQUIPMENT section
- the TRADE PUBLICATION section

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National Safety News, April, 1957



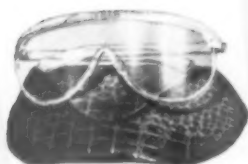
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**FOR SAFETY**

# 14



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